



Sutter Medical Center, Sacramento

## Traffic Technical Appendices

for the

## Sutter Medical Center, Sacramento (SMCS) Project and the Trinity Cathedral Project

## Draft Environmental Impact Report (EIR)

### Volume III

Prepared for  
City of Sacramento



Prepared by  
EIP Associates

July 2005





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**Traffic Appendix**  
**Sutter Medical Center, Sacramento**  
**Trinity Cathedral**



# Freeway Analysis Appendix

## Mainline and Ramps





| Direction  | Capital City Freeway<br>Mainline Segment | Existing |       | Existing Plus<br>Sutter Project |       | Cumulative<br>Without Project |       | Cumulative<br>Without Project<br>With Two-Way<br>Conversion |       | Cumulative With<br>Sutter Project |       | Cumulative With<br>Sutter Program<br>and Trinity<br>Project |       | Cumulative With<br>Sutter Project<br>With Two-Way<br>Conversion |       | Cumulative With<br>Sutter Program<br>and Trinity<br>Project With Two<br>Way Conversion |       | Existing Plus<br>Trinity Project |       | Cumulative With<br>Trinity Project |       |       |       |
|------------|--|----------|-------|---------------------------------|-------|-------------------------------|-------|---|-------|-----------------------------------|-------|---|-------|---|-------|--|-------|----------------------------------|-------|------------------------------------|-------|-------|-------|
|            |  | AM       | PM    | AM                              | PM    | AM                            | PM    | AM  | PM    | AM                                | PM    | AM  | PM    | AM  | PM    | AM   | PM    | AM                               | PM    | AM                                 | PM    | AM    | PM    |
| Northbound | South of N Street Exit                   | 7,520    | 5,570 | 7,545                           | 5,567 | 7,874                         | 6,100 | 7,908   | 6,126 | 7,888                             | 6,109 | 7,877   | 6,109 | 7,925   | 6,144 | 7,904  | 6,143 | 7,534                            | 5,568 | 7,881                              | 6,094 | 7,881 | 6,094 |
|            | N Street Exit to P Street Entrance       | 6,250    | 5,170 | 6,256                           | 5,126 | 6,790                         | 5,652 | 6,842   | 5,670 | 6,820                             | 5,646 | 6,821   | 5,646 | 6,850   | 5,648 | 6,838  | 5,652 | 6,248                            | 5,161 | 6,812                              | 5,641 | 6,812 | 5,641 |
|            | P Street Entrance to H Street Exit       | 6,700    | 5,550 | 6,709                           | 5,503 | 7,299                         | 6,046 | 7,372   | 6,094 | 7,317                             | 6,031 | 7,313   | 6,031 | 7,375   | 6,068 | 7,365  | 6,071 | 6,697                            | 5,540 | 7,314                              | 6,034 | 7,314 | 6,034 |
|            | H Street Exit to J Street Entrance       | 6,100    | 4,950 | 6,067                           | 4,904 | 6,346                         | 5,167 | 6,381   | 5,198 | 6,326                             | 5,127 | 6,327   | 5,127 | 6,348   | 5,156 | 6,344  | 5,159 | 6,110                            | 4,941 | 6,353                              | 5,164 | 6,353 | 5,164 |
| Southbound | North of J Street Entrance               | 6,550    | 5,700 | 6,554                           | 5,694 | 6,751                         | 5,921 | 6,852   | 6,134 | 6,762                             | 5,922 | 6,765   | 5,936 | 6,869   | 6,163 | 6,866  | 6,171 | 6,557                            | 5,676 | 6,762                              | 5,916 | 6,762 | 5,916 |
|            | North of J Street Exit                   | 6,350    | 5,800 | 6,411                           | 5,821 | 6,494                         | 5,949 | 6,505   | 5,949 | 6,527                             | 5,960 | 6,531   | 5,964 | 6,540   | 5,965 | 6,550  | 5,965 | 6,361                            | 5,802 | 6,501                              | 5,954 | 6,501 | 5,954 |
|            | J Street Exit to H Street Entrance       | 5,360    | 5,160 | 5,337                           | 5,139 | 5,491                         | 5,301 | 5,505   | 5,290 | 5,444                             | 5,271 | 5,443   | 5,274 | 5,474   | 5,264 | 5,478  | 5,261 | 5,368                            | 5,158 | 5,494                              | 5,301 | 5,494 | 5,301 |
|            | H Street Entrance to P Street Exit       | 5,860    | 5,960 | 5,843                           | 5,941 | 6,092                         | 6,303 | 6,120   | 6,323 | 6,046                             | 6,300 | 6,046   | 6,297 | 6,093   | 6,342 | 6,096  | 6,339 | 5,868                            | 5,947 | 6,094                              | 6,310 | 6,094 | 6,310 |
| Northbound | P Street Exit to N Street Entrance       | 4,890    | 5,440 | 4,883                           | 5,424 | 5,214                         | 5,767 | 5,178   | 5,761 | 5,188                             | 5,771 | 5,188   | 5,761 | 5,153   | 5,775 | 5,157  | 5,776 | 4,894                            | 5,430 | 5,217                              | 5,769 | 5,217 | 5,769 |
|            | South of N Street Entrance               | 5,740    | 6,820 | 5,779                           | 6,852 | 6,290                         | 7,197 | 6,241   | 7,222 | 6,326                             | 7,191 | 6,327   | 7,222 | 6,276   | 7,217 | 6,273  | 7,228 | 5,746                            | 6,811 | 6,297                              | 7,194 | 6,297 | 7,194 |
|            | N Street Exit                            | 1,270    | 400   | 1,289                           | 441   | 1,084                         | 448   | 1,066   | 456   | 1,068                             | 462   | 1,056   | 463   | 1,075   | 496   | 1,066  | 491   | 1,286                            | 407   | 1,069                              | 453   | 1,069 | 453   |
|            | P Street Entrance                        | 450      | 380   | 453                             | 377   | 509                           | 394   | 530   | 424   | 497                               | 384   | 492   | 385   | 525   | 420   | 527  | 419   | 449                              | 379   | 502                                | 393   | 502   | 393   |
| Southbound | H Street Exit                            | 600      | 600   | 642                             | 599   | 953                           | 879   | 991   | 896   | 991                               | 904   | 986   | 904   | 1,027   | 912   | 1,021  | 912   | 587                              | 599   | 961                                | 870   | 961   | 870   |
|            | H Street Entrance                        | 500      | 800   | 506                             | 802   | 601                           | 1,002 | 615   | 1,033 | 602                               | 1,029 | 603   | 1,023 | 619   | 1,078 | 618  | 1,078 | 500                              | 789   | 600                                | 1,009 | 600   | 1,009 |
|            | P Street Exit                            | 970      | 520   | 960                             | 517   | 878                           | 536   | 942   | 562   | 858                               | 536   | 858   | 536   | 940   | 567   | 939  | 563   | 974                              | 517   | 877                                | 541   | 877   | 541   |
| Northbound | N Street Entrance                        | 850      | 1,380 | 896                             | 1,428 | 1,076                         | 1,430 | 1,063   | 1,461 | 1,138                             | 1,420 | 1,139   | 1,461 | 1,123   | 1,442 | 1,116  | 1,452 | 852                              | 1,381 | 1,080                              | 1,425 | 1,080 | 1,425 |
|            | N Street Exit                            | 0.69     | 0.22  | 0.70                            | 0.24  | 0.59                          | 0.24  | 0.58  | 0.25  | 0.58                              | 0.25  | 0.58  | 0.25  | 0.59  | 0.27  | 0.58   | 0.27  | 0.70                             | 0.22  | 0.58                               | 0.25  | 0.58  | 0.25  |
|            | P Street Entrance                        | 0.25     | 0.21  | 0.25                            | 0.21  | 0.28                          | 0.21  | 0.29  | 0.23  | 0.27                              | 0.21  | 0.27  | 0.21  | 0.29  | 0.23  | 0.29   | 0.23  | 0.24                             | 0.21  | 0.27                               | 0.21  | 0.27  | 0.21  |
| Southbound | H Street Exit                            | 0.33     | 0.33  | 0.35                            | 0.33  | 0.52                          | 0.48  | 0.54  | 0.49  | 0.54                              | 0.49  | 0.54  | 0.49  | 0.56  | 0.50  | 0.56   | 0.50  | 0.32                             | 0.33  | 0.52                               | 0.47  | 0.52  | 0.47  |
|            | H Street Entrance                        | 0.27     | 0.44  | 0.28                            | 0.44  | 0.33                          | 0.55  | 0.34  | 0.56  | 0.33                              | 0.56  | 0.33  | 0.56  | 0.34  | 0.59  | 0.34   | 0.59  | 0.27                             | 0.43  | 0.33                               | 0.55  | 0.33  | 0.55  |
|            | P Street Exit                            | 0.53     | 0.28  | 0.52                            | 0.28  | 0.48                          | 0.29  | 0.51  | 0.31  | 0.47                              | 0.29  | 0.47  | 0.29  | 0.51  | 0.31  | 0.51   | 0.31  | 0.53                             | 0.28  | 0.48                               | 0.30  | 0.48  | 0.30  |
| Northbound | N Street Entrance                        | 0.46     | 0.75  | 0.49                            | 0.78  | 0.59                          | 0.78  | 0.58  | 0.80  | 0.62                              | 0.77  | 0.62  | 0.80  | 0.61  | 0.79  | 0.61   | 0.79  | 0.46                             | 0.75  | 0.59                               | 0.78  | 0.59  | 0.78  |
|            | N Street Exit                            | D        | C     | D                               | C     | C                             | C     | C   | C     | C                                 | C     | C   | C     | C   | C     | C  | C     | D                                | C     | C                                  | C     | C     | C     |
|            | P Street Entrance                        | C        | C     | C                               | C     | C                             | C     | C   | C     | C                                 | C     | C   | C     | C   | C     | C  | C     | C                                | C     | C                                  | C     | C     | C     |
| Southbound | H Street Exit                            | C        | C     | C                               | C     | C                             | C     | C   | C     | C                                 | C     | C   | C     | C   | C     | C  | C     | C                                | C     | C                                  | C     | C     | C     |
|            | P Street Exit                            | C        | C     | C                               | C     | C                             | C     | C   | C     | C                                 | C     | C   | C     | C   | C     | C  | C     | C                                | C     | C                                  | C     | C     | C     |
|            | N Street Entrance                        | C        | D     | C                               | D     | C                             | D     | C   | D     | C                                 | D     | C   | D     | C   | D     | C  | D     | C                                | C     | D                                  | C     | D     | C     |

Capacity Analysis of Freeway Mainline Segments

Capacity based on 2200 vphpl for freeway lanes, 1600 vphpl for auxiliary lanes

| Alternative:<br>Peak Hour:                                  | Frwy Lanes | Aux Lanes | Input Data |       |       |       |       |       |            |       |       |       |       |       | Future Without Two-Way Conversion |       |       |       |       |       |                      |       |       |       |       |       | Future With Two-Way Conversion |       |       |       |       |       |                      |       |       |       |       |  |
|---|------------|-----------|------------|-------|-------|-------|-------|-------|------------|-------|-------|-------|-------|-------|-----------------------------------|-------|-------|-------|-------|-------|----------------------|-------|-------|-------|-------|-------|--------------------------------|-------|-------|-------|-------|-------|----------------------|-------|-------|-------|-------|--|
|   |            |           | Existing   |       |       |       |       |       | No Project |       |       |       |       |       | With Sutter Project               |       |       |       |       |       | With Trinity Project |       |       |       |       |       | With Sutter Project            |       |       |       |       |       | With Trinity Project |       |       |       |       |  |
|   |            |           | AM         | PM    | AM    | PM    | AM    | PM    | AM         | PM    | AM    | PM    | AM    | PM    | AM                                | PM    | AM    | PM    | AM    | PM    | AM                   | PM    | AM    | PM    | AM    | PM    | AM                             | PM    | AM    | PM    | AM    | PM    |                      |       |       |       |       |  |
| SR 51 - NB - Between US 50 on Ramp and N Street off ramp    | 4          | 1         | 7,520      | 5,570 | 7,545 | 5,567 | 7,534 | 5,568 | 7,874      | 6,100 | 7,888 | 6,109 | 7,877 | 6,094 | 7,881                             | 6,812 | 5,641 | 6,821 | 5,646 | 6,842 | 5,670                | 6,850 | 5,648 | 6,838 | 5,652 | 7,908 | 6,126                          | 7,925 | 6,144 | 7,904 | 6,143 | 7,908 | 6,126                | 7,925 | 6,144 | 7,904 | 6,143 |  |
| SR 51 - NB - Between N Street off ramp and P Street on Ramp | 4          | 0         | 6,250      | 5,170 | 6,236 | 5,126 | 6,248 | 5,161 | 6,790      | 5,652 | 6,820 | 5,647 | 6,812 | 5,641 | 7,314                             | 6,034 | 7,313 | 6,031 | 6,831 | 5,107 | 6,381                | 5,198 | 6,348 | 5,156 | 6,842 | 5,670 | 6,850                          | 5,648 | 6,838 | 5,652 | 6,842 | 5,670 | 6,850                | 5,648 | 6,838 | 5,652 |       |  |
| SR 51 - NB - Between P Street on Ramp and H Street off ramp | 4          | 1         | 6,700      | 5,550 | 6,709 | 5,503 | 6,697 | 5,540 | 7,299      | 6,046 | 7,317 | 6,031 | 7,314 | 6,034 | 7,314                             | 6,034 | 7,313 | 6,031 | 6,831 | 5,107 | 6,381                | 5,198 | 6,348 | 5,156 | 7,372 | 6,094 | 7,375                          | 6,068 | 7,365 | 6,071 | 7,372 | 6,094 | 7,375                | 6,068 | 7,365 | 6,071 |       |  |
| SR 51 - NB - Between H Street off ramp and J Street on Ramp | 4          | 0         | 6,100      | 4,950 | 6,067 | 4,904 | 6,110 | 4,941 | 6,346      | 5,167 | 6,326 | 5,127 | 6,335 | 5,164 | 6,762                             | 5,916 | 6,765 | 5,916 | 6,327 | 5,127 | 6,335                | 5,164 | 6,348 | 5,156 | 6,852 | 6,134 | 6,869                          | 6,163 | 6,866 | 6,171 | 6,852 | 6,134 | 6,869                | 6,163 | 6,866 | 6,171 |       |  |
| SR 51 - SB - North of J Street off ramp                     | 3          | 0         | 6,550      | 5,700 | 6,554 | 5,694 | 6,557 | 5,676 | 6,751      | 5,921 | 6,762 | 5,922 | 6,762 | 5,916 | 7,494                             | 6,310 | 7,494 | 6,310 | 6,846 | 5,761 | 6,846                | 5,761 | 6,846 | 5,761 | 7,908 | 6,126 | 7,925                          | 6,144 | 7,904 | 6,143 | 7,908 | 6,126 | 7,925                | 6,144 | 7,904 | 6,143 |       |  |
| SR 51 - SB - Between J Street off ramp and H Street on Ramp | 3          | 0         | 6,350      | 5,800 | 6,411 | 5,821 | 6,361 | 5,821 | 6,494      | 5,949 | 6,527 | 5,960 | 6,501 | 5,954 | 7,494                             | 6,310 | 7,494 | 6,310 | 6,846 | 5,761 | 6,846                | 5,761 | 6,846 | 5,761 | 7,908 | 6,126 | 7,925                          | 6,144 | 7,904 | 6,143 | 7,908 | 6,126 | 7,925                | 6,144 | 7,904 | 6,143 |       |  |
| SR 51 - SB - Between H Street on Ramp and P Street off ramp | 3          | 1         | 5,360      | 5,160 | 5,337 | 5,139 | 5,368 | 5,148 | 5,491      | 5,301 | 5,444 | 5,271 | 5,494 | 5,301 | 5,494                             | 5,301 | 5,494 | 5,301 | 5,444 | 5,271 | 5,494                | 5,301 | 5,444 | 5,271 | 6,092 | 6,302 | 6,046                          | 6,300 | 6,046 | 6,300 | 6,092 | 6,302 | 6,046                | 6,300 | 6,046 | 6,300 |       |  |
| SR 51 - SB - Between P Street off ramp and N Street on Ramp | 3          | 0         | 5,860      | 5,960 | 5,843 | 5,941 | 5,868 | 5,947 | 6,092      | 6,302 | 6,046 | 6,300 | 6,046 | 6,300 | 6,094                             | 5,217 | 6,094 | 5,217 | 6,094 | 5,217 | 6,094                | 5,217 | 6,094 | 5,217 | 7,194 | 6,297 | 7,194                          | 6,297 | 7,194 | 6,297 | 7,194 | 6,297 | 7,194                | 6,297 | 7,194 | 6,297 |       |  |
| SR 51 - SB - Between N Street on Ramp and US 50 off ramp    | 3          | 1         | 5,740      | 6,820 | 5,779 | 6,852 | 5,746 | 6,811 | 6,290      | 7,197 | 6,826 | 7,191 | 6,297 | 7,194 | 6,297                             | 7,194 | 6,297 | 7,194 | 6,297 | 7,194 | 6,297                | 7,194 | 6,297 | 7,194 | 6,241 | 7,222 | 6,276                          | 7,217 | 6,273 | 7,228 | 6,241 | 7,222 | 6,276                | 7,217 | 6,273 | 7,228 |       |  |

Calculations

| Alternative:<br>Peak Hour:                                  | Volume to Capacity (V/C) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|   | AM                       | PM   | AM   | PM   | AM   | PM   | AM   | PM   | AM   | PM   | AM   | PM   |      |      |      |      |      |      |      |      |      |      |      |      |
| SR 51 - NB - Between US 50 on Ramp and N Street off ramp    | 0.72                     | 0.54 | 0.73 | 0.54 | 0.71 | 0.54 | 0.72 | 0.54 | 0.76 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 |
| SR 51 - NB - Between N Street off ramp and P Street on Ramp | 0.64                     | 0.53 | 0.65 | 0.53 | 0.64 | 0.53 | 0.64 | 0.53 | 0.70 | 0.58 | 0.70 | 0.58 | 0.76 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 |
| SR 51 - NB - Between P Street on Ramp and H Street off ramp | 0.69                     | 0.56 | 0.69 | 0.56 | 0.69 | 0.56 | 0.69 | 0.56 | 0.72 | 0.59 | 0.72 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 |
| SR 51 - NB - Between H Street off ramp and J Street on Ramp | 0.99                     | 0.86 | 0.99 | 0.86 | 0.99 | 0.86 | 0.99 | 0.86 | 1.02 | 0.90 | 1.02 | 0.90 | 0.76 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 |
| SR 51 - NB - North of J Street off ramp                     | 0.96                     | 0.88 | 0.97 | 0.88 | 0.96 | 0.88 | 0.96 | 0.88 | 0.98 | 0.90 | 0.99 | 0.90 | 0.76 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 |
| SR 51 - SB - Between J Street off ramp and H Street on Ramp | 0.81                     | 0.78 | 0.81 | 0.78 | 0.81 | 0.78 | 0.81 | 0.78 | 0.83 | 0.80 | 0.82 | 0.80 | 0.76 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 |
| SR 51 - SB - Between H Street on Ramp and P Street off ramp | 0.71                     | 0.73 | 0.74 | 0.72 | 0.72 | 0.73 | 0.74 | 0.72 | 0.74 | 0.77 | 0.74 | 0.77 | 0.76 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 |
| SR 51 - SB - Between P Street off ramp and N Street on Ramp | 0.74                     | 0.82 | 0.74 | 0.82 | 0.74 | 0.82 | 0.74 | 0.82 | 0.79 | 0.87 | 0.79 | 0.87 | 0.76 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 |
| SR 51 - SB - Between N Street on Ramp and US 50 off ramp    | 0.70                     | 0.83 | 0.70 | 0.83 | 0.70 | 0.83 | 0.70 | 0.83 | 0.77 | 0.88 | 0.77 | 0.88 | 0.76 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 | 0.76 | 0.59 |

Level of Service:

| Alternative:<br>Peak Hour:                                  | Level of Service |    |    |    |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |   |   |   |   |   |
|---|------------------|----|----|----|----|----|----|----|----|----|----|----|---|---|---|---|---|---|---|---|---|---|---|---|
|   | AM               | PM | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM |   |   |   |   |   |   |   |   |   |   |   |   |
| SR 51 - NB - Between US 50 on Ramp and N Street off ramp    | C                | C  | C  | C  | C  | C  | C  | C  | C  | C  | C  | C  | C | C | C | C | C | C | C | C | C | C | C | C |
| SR 51 - NB - Between N Street off ramp and P Street on Ramp | C                | C  | C  | C  | C  | C  | C  | C  | C  | C  | C  | C  | C | C | C | C | C | C | C | C | C | C | C | C |
| SR 51 - NB - Between P Street on Ramp and H Street off ramp | C                | C  | C  | C  | C  | C  | C  | C  | C  | C  | C  | C  | C | C | C | C | C | C | C | C | C | C | C | C |
| SR 51 - NB - Between H Street off ramp and J Street on Ramp | E                | D  | E  | D  | E  | D  | E  | D  | E  | D  | E  | D  | C | C | C | C | C | C | C | C | C | C | C | C |
| SR 51 - SB - North of J Street off ramp                     | E                | D  | E  | D  | E  | D  | E  | D  | E  | D  | E  | D  | C | C | C | C | C | C | C | C | C | C | C | C |
| SR 51 - SB - Between J Street off ramp and H Street on Ramp | D                | D  | D  | D  | D  | D  | D  | D  | D  | D  | D  | D  | C | C | C | C | C | C | C | C | C | C | C | C |
| SR 51 - SB - Between H Street on Ramp and P Street off ramp | C                | C  | C  | C  | C  | C  | C  | C  | C  | C  | C  | C  | C | C | C | C | C | C | C | C | C | C | C | C |
| SR 51 - SB - Between P Street off ramp and N Street on Ramp | C                | C  | C  | C  | C  | C  | C  | C  | C  | C  | C  | C  | C | C | C | C | C | C | C | C | C | C | C | C |
| SR 51 - SB - Between N Street on Ramp and US 50 off ramp    | C                | C  | C  | C  | C  | C  | C  | C  | C  | C  | C  | C  | C | C | C | C | C | C | C | C | C | C | C | C |

**SR-51 South Off-Ramp to J Street**

Highway Capacity Manual, Special Report 209  
2000 Edition

Capacity Analysis of Freeway Ramps

Single Lane Off-Ramp  
6 Lane Freeway

**Input Data**

| Alternative:               | Existing   |       |                     |       |                      |       | Future Without Two-Way Conversion |       |                     |       |                      |       | Future With Two-Way Conversion |       |                     |       |                      |       |       |       |  |
|----------------------------|------------|-------|---------------------|-------|----------------------|-------|-----------------------------------|-------|---------------------|-------|----------------------|-------|--------------------------------|-------|---------------------|-------|----------------------|-------|-------|-------|--|
|                            | No Project |       | With Sutter Project |       | With Trinity Project |       | No Project                        |       | With Sutter Project |       | With Trinity Project |       | No Project                     |       | With Sutter Project |       | With Trinity Project |       |       |       |  |
|                            | AM         | PM    | AM                  | PM    | AM                   | PM    | AM                                | PM    | AM                  | PM    | AM                   | PM    | AM                             | PM    | AM                  | PM    | AM                   | PM    |       |       |  |
| Peak Hour:                 | 6,350      | 5,800 | 6,411               | 5,821 | 6,361                | 5,802 | 6,494                             | 5,949 | 6,527               | 5,960 | 6,501                | 5,954 | 6,531                          | 5,964 | 6,505               | 5,949 | 6,540                | 5,965 | 6,550 | 5,965 |  |
| Freeway Volume (Upstream): | 990        | 640   | 1,074               | 682   | 992                  | 644   | 1,003                             | 649   | 1,083               | 690   | 1,008                | 654   | 1,088                          | 691   | 1,000               | 660   | 1,066                | 702   | 1,071 | 704   |  |
| Ramp Volume:               | 200        | 200   | 200                 | 200   | 200                  | 200   | 200                               | 200   | 200                 | 200   | 200                  | 200   | 200                            | 200   | 200                 | 200   | 200                  | 200   | 200   | 200   |  |
| Deceleration Length (ft):  | 40         | 40    | 40                  | 40    | 40                   | 40    | 40                                | 40    | 40                  | 40    | 40                   | 40    | 40                             | 40    | 40                  | 40    | 40                   | 40    | 40    | 40    |  |
| Ramp Design Speed (mph):   |            |       |                     |       |                      |       |                                   |       |                     |       |                      |       |                                |       |                     |       |                      |       |       |       |  |

**Calculations**

|                                     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|-------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Adjusted Freeway Volume (Upstream): | 6,927 | 6,327 | 6,994 | 6,350 | 6,939 | 6,329 | 7,084 | 6,490 | 7,120 | 6,502 | 7,092 | 6,495 | 7,125 | 6,506 | 7,096 | 6,490 | 7,135 | 6,507 | 7,145 | 6,507 |
| Adjusted Ramp Volume:               | 1,080 | 698   | 1,172 | 744   | 1,082 | 703   | 1,094 | 708   | 1,181 | 753   | 1,100 | 713   | 1,187 | 754   | 1,091 | 720   | 1,163 | 766   | 1,168 | 768   |
| Upstream Freeway Capacity:          | 7,200 | 7,200 | 7,200 | 7,200 | 7,200 | 7,200 | 7,200 | 7,200 | 7,200 | 7,200 | 7,200 | 7,200 | 7,200 | 7,200 | 7,200 | 7,200 | 7,200 | 7,200 | 7,200 | 7,200 |
| Upstream Freeway V/C:               | 0.96  | 0.88  | 0.97  | 0.88  | 0.96  | 0.88  | 0.98  | 0.90  | 0.99  | 0.90  | 0.99  | 0.90  | 0.99  | 0.90  | 0.99  | 0.90  | 0.99  | 0.90  | 0.99  | 0.90  |
| V12 (upstream two-lane volume):     | 4221  | 3905  | 4265  | 3923  | 4226  | 3907  | 4284  | 3976  | 4315  | 3989  | 4288  | 3979  | 4318  | 3990  | 4288  | 3978  | 4317  | 3993  | 4322  | 3993  |
| V12 Capacity:                       | 4400  | 4400  | 4400  | 4400  | 4400  | 4400  | 4400  | 4400  | 4400  | 4400  | 4400  | 4400  | 4400  | 4400  | 4400  | 4400  | 4400  | 4400  | 4400  | 4400  |
| V12 V/C:                            | 0.96  | 0.89  | 0.97  | 0.89  | 0.96  | 0.89  | 0.97  | 0.90  | 0.98  | 0.91  | 0.97  | 0.90  | 0.98  | 0.91  | 0.97  | 0.90  | 0.98  | 0.91  | 0.98  | 0.91  |
| Density (pc/mi/ln):                 | 38.75 | 36.04 | 39.13 | 36.19 | 38.80 | 36.05 | 39.29 | 36.65 | 39.56 | 36.76 | 39.33 | 36.67 | 39.59 | 36.77 | 39.33 | 36.66 | 39.58 | 36.79 | 39.62 | 36.79 |
| Level of Service:                   | E     | E     | E     | E     | E     | E     | E     | E     | E     | E     | E     | E     | E     | E     | E     | E     | E     | E     | E     | E     |

J Street On-Ramp to SR-51

Highway Capacity Manual, Special Report 209  
2000 Edition

Capacity Analysis of Freeway Ramps

Single Lane On-Ramp  
8 Lane Freeway

Input Data

| Alternative:               | Existing   |       |                     |       |                      |       | Future Without Two-Way Conversion |       |                     |       |                      |       | Future With Two-Way Conversion |       |                     |       |                      |       |
|----------------------------|------------|-------|---------------------|-------|----------------------|-------|-----------------------------------|-------|---------------------|-------|----------------------|-------|--------------------------------|-------|---------------------|-------|----------------------|-------|
|                            | No Project |       | With Sutter Project |       | With Trinity Project |       | No Project                        |       | With Sutter Project |       | With Trinity Project |       | No Project                     |       | With Sutter Project |       | With Trinity Project |       |
| Peak Hour:                 | AM         | PM    | AM                  | PM    | AM                   | PM    | AM                                | PM    | AM                  | PM    | AM                   | PM    | AM                             | PM    | AM                  | PM    | AM                   | PM    |
| Freeway Volume (Upstream): | 6,100      | 4,950 | 6,067               | 4,904 | 6,110                | 4,941 | 6,346                             | 5,167 | 6,326               | 5,127 | 6,327                | 5,127 | 6,381                          | 5,198 | 6,348               | 5,156 | 6,344                | 5,159 |
| Ramp Volume:               | 450        | 750   | 487                 | 790   | 447                  | 735   | 405                               | 754   | 436                 | 795   | 409                  | 752   | 471                            | 936   | 521                 | 1,007 | 522                  | 1,012 |
| Acceleration Length (ft):  | 200        | 200   | 200                 | 200   | 200                  | 200   | 200                               | 200   | 200                 | 200   | 200                  | 200   | 200                            | 200   | 200                 | 200   | 200                  | 200   |
| Ramp Design Speed (mph):   | 40         | 40    | 40                  | 40    | 40                   | 40    | 40                                | 40    | 40                  | 40    | 40                   | 40    | 40                             | 40    | 40                  | 40    | 40                   | 40    |

Calculations

|                                     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|-------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Adjusted Freeway Volume (Upstream): | 6,655 | 5,400 | 6,619 | 5,350 | 6,665 | 5,390 | 6,923 | 5,637 | 6,901 | 5,593 | 6,931 | 5,633 | 6,902 | 5,593 | 6,925 | 5,625 | 6,921 | 5,628 |
| Adjusted Ramp Volume:               | 491   | 818   | 531   | 862   | 488   | 802   | 442   | 823   | 476   | 867   | 446   | 820   | 478   | 883   | 568   | 1,099 | 569   | 1,104 |
| Downstream Freeway Capacity:        | 9,600 | 9,600 | 9,600 | 9,600 | 9,600 | 9,600 | 9,600 | 9,600 | 9,600 | 9,600 | 9,600 | 9,600 | 9,600 | 9,600 | 9,600 | 9,600 | 9,600 | 9,600 |
| Downstream Freeway V/C:             | 0.74  | 0.65  | 0.74  | 0.65  | 0.75  | 0.65  | 0.77  | 0.67  | 0.77  | 0.67  | 0.77  | 0.67  | 0.77  | 0.67  | 0.78  | 0.70  | 0.78  | 0.70  |
| V12 (upstream two-lane volume):     | 1412  | 925   | 1371  | 887   | 1417  | 934   | 1511  | 962   | 1477  | 924   | 1510  | 964   | 1476  | 913   | 1403  | 766   | 1401  | 763   |
| VR12 (downstream two-lane volume):  | 1903  | 1743  | 1902  | 1749  | 1905  | 1736  | 1953  | 1785  | 1953  | 1791  | 1956  | 1784  | 1954  | 1796  | 1971  | 1865  | 1970  | 1867  |
| VR12 Capacity:                      | 4600  | 4600  | 4600  | 4600  | 4600  | 4600  | 4600  | 4600  | 4600  | 4600  | 4600  | 4600  | 4600  | 4600  | 4600  | 4600  | 4600  | 4600  |
| VR12 V/C:                           | 0.41  | 0.38  | 0.41  | 0.38  | 0.41  | 0.38  | 0.42  | 0.39  | 0.42  | 0.39  | 0.43  | 0.39  | 0.42  | 0.39  | 0.43  | 0.41  | 0.43  | 0.41  |
| Density (pc/mi/ln):                 | 18.84 | 17.44 | 18.81 | 17.47 | 18.86 | 17.39 | 19.25 | 17.77 | 19.24 | 17.79 | 19.27 | 17.76 | 19.24 | 17.82 | 19.33 | 18.26 | 19.33 | 18.28 |
| Level of Service:                   | B     | B     | B     | B     | B     | B     | B     | B     | B     | B     | B     | B     | B     | B     | B     | B     | B     | B     |

# Freeway Analysis Appendix

## Weave



SR-51 Northbound Weave - P Street Entrance to H Street Exit

Highway Capacity Manual, Special Report 209  
2000 Edition  
Capacity Analysis of Freeway Weaving

Type A Weave

- 4 Existing Upstream Freeway Lanes
- 4 Existing Downstream Freeway Lanes
- 5 Number of Lanes in Weaving Section

| Alternative:   | Existing      |               |                     |               |                      |               | Future Without Two-Way Conversion |               |                     |               |                      |               | Future With Two-Way Conversion |               |                     |               |                      |               |
|--|---------------|---------------|---------------------|---------------|----------------------|---------------|-----------------------------------|---------------|---------------------|---------------|----------------------|---------------|--------------------------------|---------------|---------------------|---------------|----------------------|---------------|
|  | No Project    |               | With Suffer Project |               | With Trinity Project |               | No Project                        |               | With Suffer Project |               | With Trinity Project |               | No Project                     |               | With Suffer Project |               | With Trinity Project |               |
|  | AM            | PM            | AM                  | PM            | AM                   | PM            | AM                                | PM            | AM                  | PM            | AM                   | PM            | AM                             | PM            | AM                  | PM            | AM                   | PM            |
| Peak Hour:   | 6,250         | 5,170         | 6,256               | 5,126         | 6,248                | 5,161         | 6,790                             | 5,652         | 6,820               | 5,647         | 6,821                | 5,641         | 6,842                          | 5,670         | 6,850               | 5,648         | 6,838                | 5,652         |
| Freeway Volume (Upstream)                                    | 450           | 380           | 453                 | 377           | 449                  | 379           | 509                               | 394           | 497                 | 384           | 492                  | 393           | 530                            | 424           | 525                 | 420           | 527                  | 419           |
| Entering Ramp Volume   | 600           | 600           | 641                 | 599           | 586                  | 599           | 952                               | 879           | 900                 | 904           | 985                  | 870           | 990                            | 1,027         | 912                 | 1,020         | 912                  | 1,020         |
| Existing Ramp Volume   | 6,100         | 4,950         | 6,068               | 4,904         | 6,111                | 4,941         | 6,347                             | 5,167         | 6,327               | 5,127         | 6,354                | 5,164         | 6,382                          | 5,199         | 6,348               | 5,156         | 6,345                | 5,159         |
| Freeway Volume (Downstream)                                  | 1,160         | 1,160         | 1,160               | 1,160         | 1,160                | 1,160         | 1,160                             | 1,160         | 1,160               | 1,160         | 1,160                | 1,160         | 1,160                          | 1,160         | 1,160               | 1,160         | 1,160                | 1,160         |
| Weaving Length (ft.)   | 70            | 70            | 70                  | 70            | 70                   | 70            | 70                                | 70            | 70                  | 70            | 70                   | 70            | 70                             | 70            | 70                  | 70            | 70                   | 70            |
| Free-flow Speed (mph)  | 70            | 70            | 70                  | 70            | 70                   | 70            | 70                                | 70            | 70                  | 70            | 70                   | 70            | 70                             | 70            | 70                  | 70            | 70                   | 70            |
| Calculations   |               |               |                     |               |                      |               |                                   |               |                     |               |                      |               |                                |               |                     |               |                      |               |
| V <sub>on</sub>  | 6,164         | 4,985         | 6,125               | 4,999         | 6,177                | 4,977         | 6,369                             | 5,207         | 6,360               | 5,174         | 6,384                | 5,205         | 6,384                          | 5,209         | 6,352               | 5,167         | 6,347                | 5,171         |
| V <sub>oz</sub>  | 0             | 0             | 0                   | 0             | 0                    | 0             | 0                                 | 0             | 0                   | 0             | 0                    | 0             | 0                              | 0             | 0                   | 0             | 0                    | 0             |
| V <sub>w1</sub>  | 655           | 655           | 699                 | 653           | 639                  | 653           | 1,039                             | 959           | 1,080               | 986           | 1,047                | 949           | 1,080                          | 976           | 1,120               | 995           | 1,113                | 995           |
| V <sub>w2</sub>  | 491           | 415           | 494                 | 411           | 490                  | 413           | 555                               | 430           | 542                 | 419           | 548                  | 429           | 578                            | 463           | 573                 | 458           | 575                  | 457           |
| V <sub>o</sub> (Total Flow)                                  | 7,309         | 6,055         | 7,319               | 6,003         | 7,306                | 6,044         | 7,963                             | 6,596         | 7,982               | 6,579         | 7,979                | 6,583         | 7,978                          | 6,579         | 8,045               | 6,620         | 8,035                | 6,623         |
| VR (Volume Ratio)  | 0.157         | 0.177         | 0.163               | 0.177         | 0.155                | 0.177         | 0.200                             | 0.211         | 0.203               | 0.214         | 0.200                | 0.209         | 0.202                          | 0.210         | 0.210               | 0.220         | 0.210                | 0.219         |
| R (Weaving Ratio)  | 0.429         | 0.388         | 0.414               | 0.386         | 0.434                | 0.388         | 0.348                             | 0.310         | 0.334               | 0.298         | 0.343                | 0.311         | 0.333                          | 0.349         | 0.338               | 0.315         | 0.341                | 0.315         |
| Unconstrained W <sub>w</sub> (Weaving Intensity Factor)      | 0.858         | 0.742         | 0.870               | 0.737         | 0.854                | 0.741         | 1.011                             | 0.859         | 1.019               | 0.861         | 1.013                | 0.855         | 1.017                          | 0.874         | 1.041               | 0.876         | 1.019                | 0.876         |
| Unconstrained W <sub>sw</sub> (Non-weaving Intensity Factor) | 0.410         | 0.344         | 0.420               | 0.341         | 0.407                | 0.343         | 0.531                             | 0.431         | 0.539               | 0.433         | 0.532                | 0.428         | 0.536                          | 0.444         | 0.557               | 0.446         | 0.556                | 0.445         |
| Unconstrained S <sub>w</sub> (Weaving Speed, mph)            | 47.1          | 49.4          | 47.1                | 49.5          | 47.4                 | 49.5          | 44.8                              | 47.3          | 44.7                | 47.2          | 44.8                 | 47.2          | 44.8                           | 47.0          | 44.4                | 47.0          | 44.4                 | 47.0          |
| Unconstrained S <sub>sw</sub> (Non-weaving Speed, mph)       | 57.5          | 59.7          | 57.5                | 59.7          | 57.6                 | 59.7          | 54.2                              | 56.9          | 54.0                | 56.9          | 54.2                 | 57.0          | 53.7                           | 56.6          | 53.5                | 56.5          | 53.6                 | 56.5          |
| Constrained W <sub>w</sub> (Weaving Intensity Factor)        | 2.002         | 1.732         | 2.029               | 1.720         | 1.993                | 1.729         | 2.360                             | 2.003         | 2.379               | 2.009         | 2.363                | 1.995         | 2.372                          | 2.049         | 2.429               | 2.043         | 2.424                | 2.043         |
| Constrained W <sub>sw</sub> (Non-weaving Intensity Factor)   | 0.234         | 0.196         | 0.240               | 0.195         | 0.233                | 0.196         | 0.304                             | 0.246         | 0.308               | 0.248         | 0.304                | 0.244         | 0.306                          | 0.248         | 0.318               | 0.255         | 0.317                | 0.255         |
| Constrained S <sub>w</sub> (Weaving Speed, mph)              | 35.0          | 37.0          | 34.8                | 37.1          | 35.0                 | 37.0          | 32.9                              | 35.0          | 32.8                | 34.9          | 32.8                 | 35.0          | 32.8                           | 34.7          | 32.5                | 34.7          | 32.5                 | 34.7          |
| Constrained S <sub>sw</sub> (Non-weaving Speed, mph)         | 63.6          | 65.1          | 63.4                | 65.2          | 63.7                 | 65.2          | 61.0                              | 63.2          | 60.9                | 63.1          | 61.0                 | 63.2          | 60.9                           | 63.1          | 60.5                | 62.8          | 60.5                 | 62.8          |
| N <sub>w</sub> (Weaving Lanes)                               | 1.236         | 1.298         | 1.267               | 1.300         | 1.226                | 1.298         | 1.455                             | 1.464         | 1.470               | 1.476         | 1.455                | 1.458         | 1.464                          | 1.491         | 1.504               | 1.503         | 1.502                | 1.502         |
| Type of Weave  | Unconstrained | Unconstrained | Unconstrained       | Unconstrained | Unconstrained        | Unconstrained | Unconstrained                     | Unconstrained | Unconstrained       | Unconstrained | Unconstrained        | Unconstrained | Unconstrained                  | Unconstrained | Unconstrained       | Unconstrained | Unconstrained        | Unconstrained |
| Final W <sub>w</sub> (Weaving Intensity Factor)              | 0.858         | 0.742         | 0.870               | 0.737         | 0.854                | 0.741         | 2.360                             | 2.003         | 2.379               | 2.009         | 2.363                | 1.995         | 2.372                          | 2.049         | 2.429               | 2.043         | 2.424                | 2.043         |
| Final W <sub>sw</sub> (Non-weaving Intensity Factor)         | 0.410         | 0.344         | 0.420               | 0.341         | 0.407                | 0.343         | 0.304                             | 0.246         | 0.308               | 0.248         | 0.304                | 0.244         | 0.306                          | 0.248         | 0.318               | 0.255         | 0.317                | 0.255         |
| Final S <sub>w</sub> (Weaving Speed, mph)                    | 47.3          | 49.4          | 47.1                | 49.5          | 47.4                 | 49.5          | 32.9                              | 35.0          | 32.8                | 34.9          | 32.8                 | 35.0          | 32.8                           | 34.7          | 32.5                | 34.7          | 32.5                 | 34.7          |
| Final S <sub>sw</sub> (Non-weaving Speed, mph)               | 57.5          | 59.7          | 57.5                | 59.7          | 57.6                 | 59.7          | 61.0                              | 63.2          | 60.9                | 63.1          | 61.0                 | 63.2          | 60.9                           | 63.1          | 60.5                | 62.8          | 60.5                 | 62.8          |
| S (Weaving Segment Speed, mph)                               | 55.7          | 57.6          | 55.3                | 57.6          | 55.8                 | 57.6          | 52.1                              | 54.1          | 51.8                | 54.1          | 52.1                 | 54.1          | 51.9                           | 53.8          | 51.2                | 53.8          | 51.2                 | 53.8          |
| D (Weaving Segment Density)                                  | 26.3          | 21.0          | 26.5                | 20.8          | 26.2                 | 21.0          | 30.6                              | 24.4          | 30.8                | 24.4          | 30.6                 | 24.3          | 30.7                           | 24.4          | 31.4                | 24.8          | 31.3                 | 24.8          |
| LOS  | C             | C             | C                   | C             | C                    | C             | D                                 | C             | D                   | C             | D                    | C             | D                              | C             | D                   | C             | D                    | C             |

SR-51 Northbound - weave between US 50 on ramp and N Street off ramp

Highway Capacity Manual, Special Report 209  
2000 Edition  
Capacity Analysis of Freeway Weaving

Type B Weave

Existing Upstream Frwy Lanes 4  
Existing Downstream Frwy Lanes 4  
Number of Lanes in Weaving Section 5

| Alternative:   | Existing    |             |             |                     |             |             |                      |             |             |             |             |             | Future Without Two-Way Conversion |             |             |                      |             |             |             |             |             |                     |             |             | Future With Two-Way Conversion |             |             |             |             |             |  |  |  |  |  |  |
|--|-------------|-------------|-------------|---------------------|-------------|-------------|----------------------|-------------|-------------|-------------|-------------|-------------|-----------------------------------|-------------|-------------|----------------------|-------------|-------------|-------------|-------------|-------------|---------------------|-------------|-------------|--------------------------------|-------------|-------------|-------------|-------------|-------------|--|--|--|--|--|--|
|  | No Project  |             |             | With Suiter Project |             |             | With Trinity Project |             |             | No Project  |             |             | With Suiter Project               |             |             | With Trinity Project |             |             | No Project  |             |             | With Suiter Project |             |             | With Trinity Project           |             |             |             |             |             |  |  |  |  |  |  |
|  | AM          | PM          | 70          | AM                  | PM          | 70          | AM                   | PM          | 70          | AM          | PM          | 70          | AM                                | PM          | 70          | AM                   | PM          | 70          | AM          | PM          | 70          | AM                  | PM          | 70          | AM                             | PM          | 70          | AM          | PM          | 70          |  |  |  |  |  |  |
| Peak Hour:   | 5,450       | 3,772       | 70          | 5,454               | 3,775       | 70          | 5,465                | 3,777       | 70          | 5,781       | 4,121       | 70          | 5,767                             | 4,230       | 70          | 5,765                | 4,213       | 70          | 5,810       | 4,243       | 70          | 5,792               | 4,245       | 70          | 5,787                          | 4,248       | 70          | 5,787       | 4,245       | 70          |  |  |  |  |  |  |
| Freeway Volume (Upstream)                                    | 2,070       | 1,798       | 400         | 2,091               | 1,792       | 407         | 2,069                | 1,791       | 407         | 2,093       | 1,879       | 493         | 2,113                             | 1,879       | 509         | 2,112                | 1,881       | 499         | 2,098       | 1,883       | 512         | 2,098               | 1,883       | 512         | 2,098                          | 1,889       | 512         | 2,098       | 1,889       | 512         |  |  |  |  |  |  |
| Existing Ramp Volume   | 1,270       | 400         | 660         | 1,286               | 448         | 660         | 1,282                | 407         | 660         | 1,347       | 493         | 660         | 1,334                             | 509         | 660         | 1,341                | 499         | 660         | 1,336       | 499         | 660         | 1,350               | 580         | 660         | 1,350                          | 580         | 660         | 1,350       | 580         | 660         |  |  |  |  |  |  |
| Freeway Volume (Downstream)                                  | 6,250       | 5,170       | 660         | 6,259               | 5,119       | 660         | 6,252                | 5,161       | 660         | 6,527       | 5,607       | 660         | 6,507                             | 5,600       | 660         | 6,536                | 5,595       | 660         | 6,536       | 5,597       | 660         | 6,536               | 5,595       | 660         | 6,536                          | 5,595       | 660         | 6,536       | 5,595       | 660         |  |  |  |  |  |  |
| Weaving Length (ft.)   | 660         | 660         | 70          | 660                 | 660         | 70          | 660                  | 660         | 70          | 660         | 660         | 70          | 660                               | 660         | 70          | 660                  | 660         | 70          | 660         | 660         | 70          | 660                 | 660         | 70          | 660                            | 660         | 70          | 660         | 660         | 70          |  |  |  |  |  |  |
| Free-flow Speed (mph)  | 70          | 70          | 70          | 70                  | 70          | 70          | 70                   | 70          | 70          | 70          | 70          | 70          | 70                                | 70          | 70          | 70                   | 70          | 70          | 70          | 70          | 70          | 70                  | 70          | 70          | 70                             | 70          | 70          | 70          | 70          | 70          |  |  |  |  |  |  |
| Calculations   |             |             |             |                     |             |             |                      |             |             |             |             |             |                                   |             |             |                      |             |             |             |             |             |                     |             |             |                                |             |             |             |             |             |  |  |  |  |  |  |
| V <sub>0</sub>   | 4,560       | 3,679       | 0           | 4,547               | 3,629       | 0           | 4,563                | 3,676       | 0           | 4,837       | 4,067       | 0           | 4,833                             | 4,059       | 0           | 4,826                | 4,052       | 0           | 4,881       | 4,084       | 0           | 4,876               | 4,043       | 0           | 4,856                          | 4,051       | 0           | 4,856       | 4,051       | 0           |  |  |  |  |  |  |
| V <sub>02</sub>  | 2,258       | 1,961       | 0           | 2,281               | 1,955       | 0           | 2,257                | 1,954       | 0           | 2,283       | 2,050       | 0           | 2,314                             | 2,050       | 0           | 2,304                | 2,052       | 0           | 2,389       | 2,054       | 0           | 2,327               | 2,072       | 0           | 2,309                          | 2,067       | 0           | 2,309       | 2,067       | 0           |  |  |  |  |  |  |
| V <sub>04</sub>  | 1,385       | 436         | 0           | 1,403               | 489         | 0           | 1,399                | 444         | 0           | 1,469       | 538         | 0           | 1,459                             | 555         | 0           | 1,463                | 544         | 0           | 1,457       | 544         | 0           | 1,473               | 588         | 0           | 1,457                          | 584         | 0           | 1,457       | 584         | 0           |  |  |  |  |  |  |
| V (Total Flow)   | 8,204       | 6,076       | 823         | 8,231               | 6,073       | 823         | 8,219                | 6,074       | 823         | 8,590       | 6,655       | 860         | 8,605                             | 6,664       | 860         | 8,593                | 6,648       | 860         | 8,627       | 6,683       | 860         | 8,645               | 6,703       | 860         | 8,623                          | 6,701       | 860         | 8,623       | 6,701       | 860         |  |  |  |  |  |  |
| VR (Volume Ratio)  | 0.444       | 0.395       | 0.448       | 0.448               | 0.402       | 0.445       | 0.395                | 0.402       | 0.445       | 0.389       | 0.389       | 0.214       | 0.438                             | 0.391       | 0.437       | 0.391                | 0.438       | 0.392       | 0.434       | 0.389       | 0.437       | 0.389               | 0.439       | 0.387       | 0.437                          | 0.387       | 0.437       | 0.387       | 0.437       | 0.387       |  |  |  |  |  |  |
| Unconstrained W <sub>w</sub> (Weaving Intensity Factor)      | 0.380       | 0.182       | 0.381       | 0.381               | 0.200       | 0.383       | 0.185                | 0.383       | 0.185       | 0.387       | 0.208       | 0.387       | 0.210                             | 0.387       | 0.213       | 0.387                | 0.210       | 0.388       | 0.214       | 0.389       | 0.209       | 0.388               | 0.221       | 0.388       | 0.221                          | 0.387       | 0.220       | 0.387       | 0.220       | 0.387       |  |  |  |  |  |  |
| Unconstrained W <sub>nv</sub> (Non-weaving Intensity Factor) | 1.244       | 0.934       | 1.254       | 1,254               | 0.945       | 1,247       | 0.934                | 1,271       | 0.986       | 1,271       | 0.986       | 1,249       | 1,255                             | 0.948       | 1,248       | 0.986                | 1,249       | 0.986       | 1,249       | 0.986       | 1,249       | 0.986               | 1,249       | 0.986       | 1,249                          | 0.986       | 1,249       | 0.986       | 1,249       | 0.986       |  |  |  |  |  |  |
| Unconstrained S <sub>w</sub> (Weaving Speed, mph)            | 1,159       | 460         | 1,179       | 1,179               | 458         | 1,164       | 460                  | 1,177       | 460         | 1,177       | 452         | 405         | 405                               | 443         | 406         | 443                  | 406         | 443         | 406         | 443         | 406         | 443                 | 406         | 443         | 406                            | 443         | 406         | 443         | 406         | 443         |  |  |  |  |  |  |
| Unconstrained S <sub>nv</sub> (Non-weaving Speed, mph)       | 41.7        | 50.4        | 42.5        | 42.5                | 49.9        | 42.7        | 50.4                 | 42.6        | 49.4        | 42.6        | 49.4        | 41.6        | 41.6                              | 48.4        | 41.7        | 48.5                 | 41.6        | 48.4        | 41.8        | 48.5        | 41.7        | 48.5                | 41.6        | 48.4        | 41.7                           | 48.5        | 41.6        | 48.4        | 41.7        |             |  |  |  |  |  |  |
| Constrained W <sub>w</sub> (Weaving Intensity Factor)        | 2,333       | 1,751       | 2,351       | 2,351               | 1,772       | 2,339       | 1,751                | 2,333       | 1,751       | 2,333       | 1,850       | 2,330       | 2,330                             | 1,965       | 2,324       | 1,960                | 2,327       | 1,960       | 2,318       | 1,962       | 2,342       | 1,991               | 2,327       | 1,987       | 2,327                          | 1,987       | 2,327       | 1,987       | 2,327       | 1,987       |  |  |  |  |  |  |
| Constrained W <sub>nv</sub> (Non-weaving Intensity Factor)   | 0.379       | 0.348       | 0.390       | 0.348               | 0.360       | 0.382       | 0.348                | 0.389       | 0.372       | 0.389       | 0.372       | 0.362       | 0.628                             | 0.397       | 0.624       | 0.396                | 0.627       | 0.399       | 0.618       | 0.395       | 0.633       | 0.410               | 0.625       | 0.410       | 0.625                          | 0.410       | 0.625       | 0.410       | 0.625       | 0.410       |  |  |  |  |  |  |
| Constrained S <sub>w</sub> (Weaving Speed, mph)              | 33.0        | 36.8        | 32.9        | 36.6                | 36.6        | 33.0        | 36.8                 | 32.7        | 36.1        | 36.1        | 36.1        | 32.0        | 35.2                              | 32.0        | 35.2        | 35.3                 | 32.0        | 35.2        | 32.1        | 35.3        | 31.9        | 35.1                | 32.0        | 35.1        | 32.0                           | 35.1        | 32.0        | 35.1        | 32.0        |             |  |  |  |  |  |  |
| Constrained S <sub>nv</sub> (Non-weaving Speed, mph)         | 53.0        | 59.5        | 52.7        | 59.1                | 52.9        | 59.5        | 52.8                 | 58.7        | 58.7        | 58.7        | 58.7        | 51.9        | 58.0                              | 51.9        | 58.0        | 51.9                 | 58.0        | 51.9        | 58.0        | 51.9        | 58.0        | 51.9                | 58.0        | 51.9        | 58.0                           | 51.9        | 58.0        | 51.9        | 58.0        | 51.9        |  |  |  |  |  |  |
| N <sub>w</sub> (Weaving Lanes)                               | 3,861       | 3,983       | 3,859       | 3,859               | 3,983       | 3,860       | 3,983                | 3,842       | 3,949       | 3,842       | 3,949       | 4,052       | 4,161                             | 4,052       | 4,161       | 4,052                | 4,162       | 4,052       | 4,161       | 4,051       | 4,160       | 4,050               | 4,158       | 4,051       | 4,158                          | 4,051       | 4,158       | 4,051       | 4,158       | 4,051       |  |  |  |  |  |  |
| Type of Weave  | Constrained | Constrained | Constrained | Constrained         | Constrained | Constrained | Constrained          | Constrained | Constrained | Constrained | Constrained | Constrained | Constrained                       | Constrained | Constrained | Constrained          | Constrained | Constrained | Constrained | Constrained | Constrained | Constrained         | Constrained | Constrained | Constrained                    | Constrained | Constrained | Constrained | Constrained | Constrained |  |  |  |  |  |  |
| Final W <sub>w</sub> (Weaving Intensity Factor)              | 2,333       | 1,751       | 2,351       | 2,351               | 1,772       | 2,339       | 1,751                | 2,333       | 1,751       | 2,333       | 1,850       | 2,330       | 2,330                             | 1,965       | 2,324       | 1,960                | 2,327       | 1,960       | 2,318       | 1,962       | 2,342       | 1,991               | 2,327       | 1,987       | 2,327                          | 1,987       | 2,327       | 1,987       | 2,327       | 1,987       |  |  |  |  |  |  |
| Final W <sub>nv</sub> (Non-weaving Intensity Factor)         | 0.379       | 0.348       | 0.390       | 0.348               | 0.360       | 0.382       | 0.348                | 0.389       | 0.372       | 0.389       | 0.372       | 0.362       | 0.628                             | 0.397       | 0.624       | 0.396                | 0.627       | 0.399       | 0.618       | 0.395       | 0.633       | 0.410               | 0.625       | 0.410       | 0.625                          | 0.410       | 0.625       | 0.410       | 0.625       | 0.410       |  |  |  |  |  |  |
| Final S <sub>w</sub> (Weaving Speed, mph)                    | 33.0        | 36.8        | 32.9        | 36.6                | 36.6        | 33.0        | 36.8                 | 32.7        | 36.1        | 36.1        | 36.1        | 32.0        | 35.2                              | 32.0        | 35.2        | 35.3                 | 32.0        | 35.2        | 32.1        | 35.3        | 31.9        | 35.1                | 32.0        | 35.1        | 32.0                           | 35.1        | 32.0        | 35.1        | 32.0        |             |  |  |  |  |  |  |
| Final S <sub>nv</sub> (Non-weaving Speed, mph)               | 53.0        | 59.5        | 52.7        | 59.1                | 52.9        | 59.5        | 52.8                 | 58.7        | 58.7        | 58.7        | 58.7        | 51.9        | 58.0                              | 51.9        | 58.0        | 51.9                 | 58.0        | 51.9        | 58.0        | 51.9        | 58.0        | 51.9                | 58.0        | 51.9        | 58.0                           | 51.9        | 58.0        | 51.9        | 58.0        | 51.9        |  |  |  |  |  |  |
| S (Weaving Segment Speed, mph)                               | 41.8        | 47.9        | 41.5        | 47.4                | 41.7        | 47.4        | 41.6                 | 47.2        | 47.2        | 47.2        | 47.2        | 40.8        | 46.3                              | 40.8        | 46.3        | 40.8                 | 46.3        | 40.8        | 46.2        | 41.0        | 46.4        | 40.7                | 45.9        | 40.8        | 46.0                           | 46.0        | 46.0        | 46.0        | 46.0        | 46.0        |  |  |  |  |  |  |
| D (Weaving Segment Density)                                  | 39.3        | 25.4        | 39.6        | 25.6                | 39.4        | 25.4        | 39.4                 | 25.4        | 38.7        | 28.2        | 42.2        | 28.8        | 42.2                              | 28.8        | 42.1        | 28.7                 | 42.1        | 28.8        | 42.1        | 28.8        | 42.1        | 28.7                | 42.1        | 28.8        | 42.1                           | 28.8        | 42.1        | 28.8        | 42.1        | 28.8        |  |  |  |  |  |  |
| LDS  | E           | C           | E           | C                   | E           | C           | E                    | C           | E           | D           | E           | E           | E                                 | D           | E           | D                    | E           | D           | E           | E           | D           | E                   | D           | E           | D                              | E           | D           | E           | D           | E           |  |  |  |  |  |  |



SR-51 Southbound - weave between N Street on ramp and US 50 off ramp

Highway Capacity Manual, Special Report 209  
2000 Edition  
Capacity Analysis of Freeway Weaving

Type B Weave

| Alternative:                       | Existing   |       |                     |       |                      |       | Future Without Two-Way Conversion |       |                     |       |                      |       | Future With Two-Way Conversion |       |                     |       |                      |       |  |
|------------------------------------|------------|-------|---------------------|-------|----------------------|-------|-----------------------------------|-------|---------------------|-------|----------------------|-------|--------------------------------|-------|---------------------|-------|----------------------|-------|--|
|                                    | No Project |       | With Suiter Project |       | With Trinity Project |       | No Project                        |       | With Suiter Project |       | With Trinity Project |       | No Project                     |       | With Suiter Project |       | With Trinity Project |       |  |
|                                    | AM         | PM    | AM                  | PM    | AM                   | PM    | AM                                | PM    | AM                  | PM    | AM                   | PM    | AM                             | PM    | AM                  | PM    | AM                   | PM    |  |
| Existing Upstream Freeway Lanes    | 4          |       |                     |       |                      |       |                                   |       |                     |       |                      |       |                                |       |                     |       |                      |       |  |
| Existing Downstream Freeway Lanes  | 4          |       |                     |       |                      |       |                                   |       |                     |       |                      |       |                                |       |                     |       |                      |       |  |
| Number of Lanes in Weaving Section | 5          |       |                     |       |                      |       |                                   |       |                     |       |                      |       |                                |       |                     |       |                      |       |  |
| Peak Hour:                         | 4,890      | 5,440 | 4,883               | 5,424 | 4,894                | 5,430 | 5,214                             | 5,767 | 5,188               | 5,761 | 5,217                | 5,767 | 5,178                          | 5,761 | 5,153               | 5,775 | 5,177                | 5,776 |  |
| Entering Ramp Volume               | 850        | 1,380 | 896                 | 1,428 | 852                  | 1,381 | 1,076                             | 1,430 | 1,138               | 1,420 | 1,080                | 1,461 | 1,063                          | 1,461 | 1,123               | 1,442 | 1,116                | 1,452 |  |
| Existing Ramp Volume               | 1,865      | 2,301 | 1,904               | 2,343 | 1,868                | 2,301 | 2,017                             | 2,484 | 2,031               | 2,486 | 2,027                | 2,447 | 1,973                          | 2,431 | 1,992               | 2,474 | 1,996                | 2,471 |  |
| Freeway Volume (Downstream)        | 3,875      | 4,519 | 3,875               | 4,509 | 3,878                | 4,510 | 4,273                             | 4,753 | 4,295               | 4,705 | 4,270                | 4,747 | 4,268                          | 4,791 | 4,284               | 4,743 | 4,277                | 4,757 |  |
| Weaving Length (ft.)               | 660        | 660   | 660                 | 660   | 660                  | 660   | 660                               | 660   | 660                 | 660   | 660                  | 660   | 660                            | 660   | 660                 | 660   | 660                  | 660   |  |
| Free-flow Speed (mph)              | 70         | 70    | 70                  | 70    | 70                   | 70    | 70                                | 70    | 70                  | 70    | 70                   | 70    | 70                             | 70    | 70                  | 70    | 70                   | 70    |  |

| Input Data  | Calculations |             |                     |             |                      |             |             |             |                     |             |                      |             |             |             |                     |             |                      |
|---|--------------|-------------|---------------------|-------------|----------------------|-------------|-------------|-------------|---------------------|-------------|----------------------|-------------|-------------|-------------|---------------------|-------------|----------------------|
|   | No Project   |             | With Suiter Project |             | With Trinity Project |             | No Project  |             | With Suiter Project |             | With Trinity Project |             | No Project  |             | With Suiter Project |             | With Trinity Project |
| $V_{or}$  | 3,300        | 3,424       | 3,250               | 3,361       | 3,301                | 3,413       | 3,488       | 3,625       | 3,444               | 3,584       | 3,480                | 3,624       | 3,496       | 3,653       | 3,448               | 3,601       | 3,448                |
| $V_{or}$  | 0            | 0           | 0                   | 0           | 0                    | 0           | 0           | 0           | 0                   | 0           | 0                    | 0           | 0           | 0           | 0                   | 0           | 0                    |
| $V_{w1}$  | 2,035        | 2,510       | 2,077               | 2,556       | 2,038                | 2,510       | 2,200       | 2,666       | 2,216               | 2,712       | 2,211                | 2,669       | 2,152       | 2,652       | 2,173               | 2,699       | 2,177                |
| $V_{w2}$  | 927          | 1,505       | 977                 | 1,558       | 929                  | 1,507       | 1,174       | 1,560       | 1,241               | 1,549       | 1,178                | 1,555       | 1,160       | 1,594       | 1,225               | 1,573       | 1,217                |
| $V$ (Total Flow)                                      | 6,262        | 7,440       | 6,304               | 7,475       | 6,268                | 7,430       | 6,862       | 7,851       | 7,845               | 7,848       | 6,869                | 7,848       | 6,869       | 7,879       | 6,847               | 7,873       | 6,843                |
| $VR$ (Volume Ratio)                                   | 0.313        | 0.540       | 0.485               | 0.550       | 0.473                | 0.541       | 0.492       | 0.538       | 0.501               | 0.545       | 0.493                | 0.538       | 0.500       | 0.546       | 0.496               | 0.543       | 0.496                |
| $R$ (Weaving Ratio)                                   | 0.176        | 0.375       | 0.320               | 0.379       | 0.313                | 0.375       | 0.348       | 0.369       | 0.359               | 0.364       | 0.348                | 0.368       | 0.360       | 0.370       | 0.361               | 0.368       | 0.359                |
| Unconstrained $W_{w1}$ (Non-weaving Intensity Factor) | 0.906        | 1.051       | 1.100               | 1.363       | 1.077                | 1.339       | 1.179       | 1.387       | 1.269               | 1.476       | 1.251                | 1.466       | 1.268       | 1.487       | 1.254               | 1.479       | 1.254                |
| Unconstrained $W_{w2}$ (Non-weaving Intensity Factor) | 0.906        | 1.051       | 1.100               | 1.363       | 1.077                | 1.339       | 1.179       | 1.387       | 1.269               | 1.476       | 1.251                | 1.466       | 1.268       | 1.487       | 1.254               | 1.479       | 1.254                |
| Unconstrained $S_w$ (Weaving Speed, mph)              | 43.9         | 40.7        | 43.6                | 40.4        | 43.9                 | 40.7        | 42.5        | 40.1        | 41.4                | 39.2        | 41.6                 | 39.3        | 41.5        | 39.1        | 41.6                | 39.2        | 41.6                 |
| Unconstrained $S_{w1}$ (Non-weaving Speed, mph)       | 45.1         | 38.6        | 44.3                | 37.9        | 45.0                 | 38.6        | 42.6        | 37.9        | 41.1                | 36.9        | 41.6                 | 37.1        | 41.1        | 36.6        | 41.5                | 36.8        | 41.5                 |
| Constrained $W_w$ (Weaving Intensity Factor)          | 2.017        | 2.509       | 2.062               | 2.556       | 2.020                | 2.510       | 2.211       | 2.609       | 2.380               | 2.768       | 2.347                | 2.749       | 2.378       | 2.788       | 2.351               | 2.772       | 2.350                |
| Constrained $W_{w1}$ (Non-weaving Intensity Factor)   | 0.998        | 0.772       | 0.525               | 0.808       | 0.499                | 0.775       | 0.589       | 0.810       | 0.690               | 0.872       | 0.627                | 0.856       | 0.648       | 0.862       | 0.633               | 0.874       | 0.632                |
| Constrained $S_w$ (Weaving Speed, mph)                | 34.9         | 32.1        | 34.6                | 31.9        | 34.9                 | 32.1        | 35.7        | 31.7        | 32.7                | 30.9        | 32.9                 | 31.0        | 32.8        | 30.8        | 32.9                | 30.9        | 32.9                 |
| Constrained $S_{w1}$ (Non-weaving Speed, mph)         | 55.1         | 48.9        | 54.3                | 48.2        | 55.0                 | 48.8        | 48.2        | 51.4        | 47.0                | 51.9        | 47.3                 | 51.4        | 46.8        | 52.4        | 47.2                | 51.7        | 47.0                 |
| $N_w$ (Weaving Lanes)                                 | 3.971        | 3.914       | 3.968               | 3.917       | 3.970                | 3.915       | 3.955       | 3.895       | 4.145               | 4.111       | 4.145                | 4.108       | 4.145       | 4.107       | 4.147               | 4.109       | 4.147                |
| Type of Weave   | Constrained  | Constrained | Constrained         | Constrained | Constrained          | Constrained | Constrained | Constrained | Constrained         | Constrained | Constrained          | Constrained | Constrained | Constrained | Constrained         | Constrained | Constrained          |
| Final $W_w$ (Weaving Intensity Factor)                | 2.017        | 2.509       | 2.062               | 2.556       | 2.020                | 2.510       | 2.211       | 2.609       | 2.380               | 2.768       | 2.347                | 2.749       | 2.378       | 2.788       | 2.351               | 2.772       | 2.350                |
| Final $W_{w1}$ (Non-weaving Intensity Factor)         | 0.998        | 0.772       | 0.525               | 0.808       | 0.499                | 0.775       | 0.589       | 0.810       | 0.690               | 0.872       | 0.627                | 0.856       | 0.648       | 0.862       | 0.633               | 0.874       | 0.632                |
| Final $S_w$ (Weaving Speed, mph)                      | 34.9         | 32.1        | 34.6                | 31.9        | 34.9                 | 32.1        | 35.7        | 31.7        | 32.7                | 30.9        | 32.9                 | 31.0        | 32.8        | 30.8        | 32.9                | 30.9        | 32.9                 |
| Final $S_{w1}$ (Non-weaving Speed, mph)               | 55.1         | 48.9        | 54.3                | 48.2        | 55.0                 | 48.8        | 48.2        | 51.4        | 47.0                | 51.9        | 47.3                 | 51.4        | 46.8        | 52.4        | 47.2                | 51.7        | 47.0                 |
| $S$ (Weaving Segment Speed, mph)                      | 43.2         | 38.1        | 42.6                | 37.6        | 43.2                 | 38.1        | 41.3        | 37.6        | 40.0                | 36.7        | 40.4                 | 36.9        | 40.0        | 36.5        | 40.3                | 36.7        | 40.3                 |
| $D$ (Weaving Segment Density)                         | 29.0         | 39.0        | 29.6                | 39.8        | 29.0                 | 39.0        | 33.3        | 41.7        | 34.5                | 42.8        | 34.0                 | 42.6        | 34.5        | 43.2        | 34.0                | 43.0        | 34.0                 |
| LOS   | D            | E           | D                   | E           | D                    | E           | D           | E           | D                   | E           | D                    | E           | D           | E           | D                   | E           | D                    |



EXISTING NO PROJECT WITH SMART PLAN

AM Peak Hour

Signalized Intersections

(am1)



HCM Signalized Intersection Capacity Analysis  
 2004: L Street & 21th Street

7/11/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT  | WBR  | NBL  | NBT                  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|-------|------|------|------|------|----------------------|------|------|------|------|
| Lane Configurations               |      |      |       |      | ↑↓   |      |      | ↑↑↑                  |      |      |      |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      |      |       |      | 4.0  |      |      | 4.0                  |      |      |      |      |
| Lane Util. Factor                 |      |      |       |      | 0.95 |      |      | 0.91                 |      |      |      |      |
| Frt                               |      |      |       |      | 0.99 |      |      | 1.00                 |      |      |      |      |
| Flt Protected                     |      |      |       |      | 1.00 |      |      | 0.99                 |      |      |      |      |
| Satd. Flow (prot)                 |      |      |       |      | 3312 |      |      | 4878                 |      |      |      |      |
| Flt Permitted                     |      |      |       |      | 1.00 |      |      | 0.99                 |      |      |      |      |
| Satd. Flow (perm)                 |      |      |       |      | 3312 |      |      | 4878                 |      |      |      |      |
| Volume (vph)                      | 0    | 0    | 0     | 0    | 635  | 70   | 191  | 1047                 | 0    | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 0    | 635  | 70   | 191  | 1047                 | 0    | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 0    | 17   | 0    | 0    | 52                   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 0    | 688  | 0    | 0    | 1186                 | 0    | 0    | 0    | 0    |
| Parking (#/hr)                    | 0    | 0    |       |      | 0    | 0    | 0    | 0                    | 0    |      |      |      |
| Turn Type                         |      |      |       |      |      |      |      | Perm                 |      |      |      |      |
| Protected Phases                  |      |      |       |      | 6    |      |      | 8                    |      |      |      |      |
| Permitted Phases                  |      |      |       |      |      |      | 8    |                      |      |      |      |      |
| Actuated Green, G (s)             |      |      |       |      | 22.0 |      |      | 22.0                 |      |      |      |      |
| Effective Green, g (s)            |      |      |       |      | 21.0 |      |      | 21.0                 |      |      |      |      |
| Actuated g/C Ratio                |      |      |       |      | 0.42 |      |      | 0.42                 |      |      |      |      |
| Clearance Time (s)                |      |      |       |      | 3.0  |      |      | 3.0                  |      |      |      |      |
| Lane Grp Cap (vph)                |      |      |       |      | 1391 |      |      | 2049                 |      |      |      |      |
| v/s Ratio Prot                    |      |      |       |      | 0.21 |      |      |                      |      |      |      |      |
| v/s Ratio Perm                    |      |      |       |      |      |      |      | 0.24                 |      |      |      |      |
| v/c Ratio                         |      |      |       |      | 0.49 |      |      | 0.58                 |      |      |      |      |
| Uniform Delay, d1                 |      |      |       |      | 10.6 |      |      | 11.1                 |      |      |      |      |
| Progression Factor                |      |      |       |      | 0.15 |      |      | 1.00                 |      |      |      |      |
| Incremental Delay, d2             |      |      |       |      | 1.1  |      |      | 1.2                  |      |      |      |      |
| Delay (s)                         |      |      |       |      | 2.8  |      |      | 12.3                 |      |      |      |      |
| Level of Service                  |      |      |       |      | A    |      |      | B                    |      |      |      |      |
| Approach Delay (s)                |      | 0.0  |       |      | 2.8  |      |      | 12.3                 |      |      | 0.0  |      |
| Approach LOS                      |      | A    |       |      | A    |      |      | B                    |      |      | A    |      |
| <b>Intersection Summary</b>       |      |      |       |      |      |      |      |                      |      |      |      |      |
| HCM Average Control Delay         |      |      | 8.8   |      |      |      |      | HCM Level of Service |      |      | A    |      |
| HCM Volume to Capacity ratio      |      |      | 0.54  |      |      |      |      |                      |      |      |      |      |
| Actuated Cycle Length (s)         |      |      | 50.0  |      |      |      |      | Sum of lost time (s) |      |      | 8.0  |      |
| Intersection Capacity Utilization |      |      | 50.6% |      |      |      |      | ICU Level of Service |      |      | A    |      |
| Analysis Period (min)             |      |      | 15    |      |      |      |      |                      |      |      |      |      |
| c Critical Lane Group             |      |      |       |      |      |      |      |                      |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
 2012: J Street & 21th Street

7/11/2005



| Movement                          | EBL                 | EBT   | EBR  | WBL  | WBT                  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|---------------------|-------|------|------|----------------------|------|------|-------|------|------|------|------|
| Lane Configurations               |                     | ↑↑↑   |      |      |                      |      |      | ↑↑↑   |      |      |      |      |
| Ideal Flow (vphpl)                | 1900                | 1900  | 1900 | 1900 | 1900                 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |                     | 4.0   |      |      |                      |      |      | 4.0   |      |      |      |      |
| Lane Util. Factor                 |                     | 0.91  |      |      |                      |      |      | 0.91  |      |      |      |      |
| Fr <sub>t</sub>                   |                     | 1.00  |      |      |                      |      |      | 0.97  |      |      |      |      |
| Fl <sub>t</sub> Protected         |                     | 1.00  |      |      |                      |      |      | 1.00  |      |      |      |      |
| Satd. Flow (prot)                 |                     | 4907  |      |      |                      |      |      | 4791  |      |      |      |      |
| Fl <sub>t</sub> Permitted         |                     | 1.00  |      |      |                      |      |      | 1.00  |      |      |      |      |
| Satd. Flow (perm)                 |                     | 4907  |      |      |                      |      |      | 4791  |      |      |      |      |
| Volume (vph)                      | 27                  | 727   | 0    | 0    | 0                    | 0    | 0    | 818   | 167  | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00                | 1.00  | 1.00 | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 27                  | 727   | 0    | 0    | 0                    | 0    | 0    | 818   | 167  | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0                   | 8     | 0    | 0    | 0                    | 0    | 0    | 55    | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 0                   | 746   | 0    | 0    | 0                    | 0    | 0    | 930   | 0    | 0    | 0    | 0    |
| Parking (#/hr)                    | 0                   | 0     |      |      |                      |      |      | 0     | 0    |      |      |      |
| Turn Type                         | Perm                |       |      |      |                      |      |      |       |      |      |      |      |
| Protected Phases                  |                     | 2     |      |      |                      |      |      | 8     |      |      |      |      |
| Permitted Phases                  | 2                   |       |      |      |                      |      |      |       |      |      |      |      |
| Actuated Green, G (s)             |                     | 21.0  |      |      |                      |      |      | 23.0  |      |      |      |      |
| Effective Green, g (s)            |                     | 20.0  |      |      |                      |      |      | 22.0  |      |      |      |      |
| Actuated g/C Ratio                |                     | 0.40  |      |      |                      |      |      | 0.44  |      |      |      |      |
| Clearance Time (s)                |                     | 3.0   |      |      |                      |      |      | 3.0   |      |      |      |      |
| Lane Grp Cap (vph)                |                     | 1963  |      |      |                      |      |      | 2108  |      |      |      |      |
| v/s Ratio Prot                    |                     |       |      |      |                      |      |      | c0.19 |      |      |      |      |
| v/s Ratio Perm                    |                     | 0.15  |      |      |                      |      |      |       |      |      |      |      |
| v/c Ratio                         |                     | 0.38  |      |      |                      |      |      | 0.44  |      |      |      |      |
| Uniform Delay, d1                 |                     | 10.6  |      |      |                      |      |      | 9.7   |      |      |      |      |
| Progression Factor                |                     | 0.39  |      |      |                      |      |      | 0.13  |      |      |      |      |
| Incremental Delay, d2             |                     | 0.5   |      |      |                      |      |      | 0.5   |      |      |      |      |
| Delay (s)                         |                     | 4.6   |      |      |                      |      |      | 1.8   |      |      |      |      |
| Level of Service                  |                     | A     |      |      |                      |      |      | A     |      |      |      |      |
| Approach Delay (s)                |                     | 4.6   |      |      | 0.0                  |      |      | 1.8   |      |      | 0.0  |      |
| Approach LOS                      |                     | A     |      |      | A                    |      |      | A     |      |      | A    |      |
| <b>Intersection Summary</b>       |                     |       |      |      |                      |      |      |       |      |      |      |      |
| HCM Average Control Delay         |                     | 3.0   |      |      | HCM Level of Service |      |      | A     |      |      |      |      |
| HCM Volume to Capacity ratio      |                     | 0.41  |      |      |                      |      |      |       |      |      |      |      |
| Actuated Cycle Length (s)         |                     | 50.0  |      |      | Sum of lost time (s) |      |      | 8.0   |      |      |      |      |
| Intersection Capacity Utilization |                     | 40.8% |      |      | ICU Level of Service |      |      | A     |      |      |      |      |
| Analysis Period (min)             |                     | 15    |      |      |                      |      |      |       |      |      |      |      |
| c                                 | Critical Lane Group |       |      |      |                      |      |      |       |      |      |      |      |

# HCM Signalized Intersection Capacity Analysis

2074: J Street & 19th Street

7/11/2005



| Movement                          | EBL                 | EBT   | EBR   | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR                  |     |
|-----------------------------------|---------------------|-------|-------|------|------|------|------|------|------|------|------|----------------------|-----|
| Lane Configurations               |                     | ↑↑↑   |       |      |      |      |      |      |      |      | ↑↑↑  |                      |     |
| Ideal Flow (vphpl)                | 1900                | 1900  | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900                 |     |
| Total Lost time (s)               |                     | 4.0   |       |      |      |      |      |      |      |      | 4.0  |                      |     |
| Lane Util. Factor                 |                     | 0.91  |       |      |      |      |      |      |      |      | 0.91 |                      |     |
| Fr <sub>t</sub>                   |                     | 0.98  |       |      |      |      |      |      |      |      | 1.00 |                      |     |
| Fl <sub>t</sub> Protected         |                     | 1.00  |       |      |      |      |      |      |      |      | 0.99 |                      |     |
| Satd. Flow (prot)                 |                     | 4821  |       |      |      |      |      |      |      |      | 4849 |                      |     |
| Fl <sub>t</sub> Permitted         |                     | 1.00  |       |      |      |      |      |      |      |      | 0.99 |                      |     |
| Satd. Flow (perm)                 |                     | 4821  |       |      |      |      |      |      |      |      | 4849 |                      |     |
| Volume (vph)                      | 0                   | 736   | 109   | 0    | 0    | 0    | 0    | 0    | 0    | 102  | 270  | 0                    |     |
| Peak-hour factor, PHF             | 1.00                | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00                 |     |
| Adj. Flow (vph)                   | 0                   | 736   | 109   | 0    | 0    | 0    | 0    | 0    | 0    | 102  | 270  | 0                    |     |
| RTOR Reduction (vph)              | 0                   | 39    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 61   | 0                    |     |
| Lane Group Flow (vph)             | 0                   | 806   | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 311  | 0                    |     |
| Parking (#/hr)                    |                     | 0     | 0     |      |      |      |      |      |      | 0    | 0    |                      |     |
| Turn Type                         |                     |       |       |      |      |      |      |      |      | Perm |      |                      |     |
| Protected Phases                  |                     | 2     |       |      |      |      |      |      |      |      | 4    |                      |     |
| Permitted Phases                  |                     |       |       |      |      |      |      |      |      | 4    |      |                      |     |
| Actuated Green, G (s)             |                     | 23.0  |       |      |      |      |      |      |      |      | 21.0 |                      |     |
| Effective Green, g (s)            |                     | 22.0  |       |      |      |      |      |      |      |      | 20.0 |                      |     |
| Actuated g/C Ratio                |                     | 0.44  |       |      |      |      |      |      |      |      | 0.40 |                      |     |
| Clearance Time (s)                |                     | 3.0   |       |      |      |      |      |      |      |      | 3.0  |                      |     |
| Lane Grp Cap (vph)                |                     | 2121  |       |      |      |      |      |      |      |      | 1940 |                      |     |
| v/s Ratio Prot                    |                     | c0.17 |       |      |      |      |      |      |      |      |      |                      |     |
| v/s Ratio Perm                    |                     |       |       |      |      |      |      |      |      |      | 0.06 |                      |     |
| v/c Ratio                         |                     | 0.38  |       |      |      |      |      |      |      |      | 0.16 |                      |     |
| Uniform Delay, d <sub>1</sub>     |                     | 9.4   |       |      |      |      |      |      |      |      | 9.6  |                      |     |
| Progression Factor                |                     | 1.00  |       |      |      |      |      |      |      |      | 1.00 |                      |     |
| Incremental Delay, d <sub>2</sub> |                     | 0.5   |       |      |      |      |      |      |      |      | 0.2  |                      |     |
| Delay (s)                         |                     | 9.9   |       |      |      |      |      |      |      |      | 9.8  |                      |     |
| Level of Service                  |                     | A     |       |      |      |      |      |      |      |      | A    |                      |     |
| Approach Delay (s)                |                     | 9.9   |       |      | 0.0  |      |      | 0.0  |      |      | 9.8  |                      |     |
| Approach LOS                      |                     | A     |       |      | A    |      |      | A    |      |      | A    |                      |     |
| <b>Intersection Summary</b>       |                     |       |       |      |      |      |      |      |      |      |      |                      |     |
| HCM Average Control Delay         |                     |       | 9.9   |      |      |      |      |      |      |      |      | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      |                     |       | 0.28  |      |      |      |      |      |      |      |      |                      |     |
| Actuated Cycle Length (s)         |                     |       | 50.0  |      |      |      |      |      |      |      |      | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization |                     |       | 30.6% |      |      |      |      |      |      |      |      | ICU Level of Service | A   |
| Analysis Period (min)             |                     |       | 15    |      |      |      |      |      |      |      |      |                      |     |
| c                                 | Critical Lane Group |       |       |      |      |      |      |      |      |      |      |                      |     |

HCM Signalized Intersection Capacity Analysis  
 2088: L Street & 29th Street

7/11/2005



| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|---------------------------|------|------|------|------|-------|------|------|------|------|------|-------|------|
| Lane Configurations       |      |      |      | ↙    | ↕     |      |      |      |      |      | ↕     | ↗    |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)       |      |      |      | 4.0  | 4.0   |      |      |      |      |      | 4.0   | 4.0  |
| Lane Util. Factor         |      |      |      | 1.00 | 0.95  |      |      |      |      |      | 0.86  | 0.86 |
| Fr <sub>t</sub>           |      |      |      | 1.00 | 1.00  |      |      |      |      |      | 1.00  | 0.85 |
| Fl <sub>t</sub> Protected |      |      |      | 0.95 | 1.00  |      |      |      |      |      | 1.00  | 1.00 |
| Satd. Flow (prot)         |      |      |      | 1770 | 3539  |      |      |      |      |      | 4646  | 1226 |
| Fl <sub>t</sub> Permitted |      |      |      | 0.95 | 1.00  |      |      |      |      |      | 1.00  | 1.00 |
| Satd. Flow (perm)         |      |      |      | 1770 | 3539  |      |      |      |      |      | 4646  | 1226 |
| Volume (vph)              | 0    | 0    | 0    | 156  | 583   | 0    | 0    | 0    | 0    | 0    | 778   | 212  |
| Peak-hour factor, PHF     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)           | 0    | 0    | 0    | 156  | 583   | 0    | 0    | 0    | 0    | 0    | 778   | 212  |
| RTOR Reduction (vph)      | 0    | 0    | 0    | 60   | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 108  |
| Lane Group Flow (vph)     | 0    | 0    | 0    | 96   | 583   | 0    | 0    | 0    | 0    | 0    | 778   | 104  |
| Parking (#/hr)            |      |      | 0    |      |       |      |      |      |      |      | 0     | 0    |
| Turn Type                 |      |      |      | Perm |       |      |      |      |      |      |       | Perm |
| Protected Phases          |      |      |      |      | 6     |      |      |      |      |      | 4     |      |
| Permitted Phases          |      |      |      | 6    |       |      |      |      |      |      |       | 4    |
| Actuated Green, G (s)     |      |      |      | 32.0 | 32.0  |      |      |      |      |      | 32.0  | 32.0 |
| Effective Green, g (s)    |      |      |      | 31.0 | 31.0  |      |      |      |      |      | 31.0  | 31.0 |
| Actuated g/C Ratio        |      |      |      | 0.44 | 0.44  |      |      |      |      |      | 0.44  | 0.44 |
| Clearance Time (s)        |      |      |      | 3.0  | 3.0   |      |      |      |      |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)        |      |      |      | 784  | 1567  |      |      |      |      |      | 2058  | 543  |
| v/s Ratio Prot            |      |      |      |      | c0.16 |      |      |      |      |      | c0.17 |      |
| v/s Ratio Perm            |      |      |      | 0.05 |       |      |      |      |      |      |       | 0.08 |
| v/c Ratio                 |      |      |      | 0.12 | 0.37  |      |      |      |      |      | 0.38  | 0.19 |
| Uniform Delay, d1         |      |      |      | 11.5 | 13.0  |      |      |      |      |      | 13.0  | 11.9 |
| Progression Factor        |      |      |      | 0.33 | 0.51  |      |      |      |      |      | 0.57  | 0.26 |
| Incremental Delay, d2     |      |      |      | 0.3  | 0.7   |      |      |      |      |      | 0.5   | 0.7  |
| Delay (s)                 |      |      |      | 4.2  | 7.2   |      |      |      |      |      | 7.9   | 3.8  |
| Level of Service          |      |      |      | A    | A     |      |      |      |      |      | A     | A    |
| Approach Delay (s)        |      | 0.0  |      |      | 6.6   |      |      | 0.0  |      |      | 7.0   |      |
| Approach LOS              |      | A    |      |      | A     |      |      | A    |      |      | A     |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 6.8   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.38  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 39.4% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis

2239: L Street & Alhambra

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations    |      |      |      |      | ↕    |      |      | ↕     |      |      | ↕    | ↕    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      |      | 4.0   |      |      | 4.0  | 4.0  |
| Lane Util. Factor      |      |      |      |      | 1.00 |      |      | 1.00  |      |      | 1.00 | 1.00 |
| Frt                    |      |      |      |      | 0.98 |      |      | 0.98  |      |      | 1.00 | 0.85 |
| Flt Protected          |      |      |      |      | 1.00 |      |      | 1.00  |      |      | 0.99 | 1.00 |
| Satd. Flow (prot)      |      |      |      |      | 1638 |      |      | 1630  |      |      | 1851 | 1425 |
| Flt Permitted          |      |      |      |      | 1.00 |      |      | 0.92  |      |      | 0.89 | 1.00 |
| Satd. Flow (perm)      |      |      |      |      | 1638 |      |      | 1514  |      |      | 1650 | 1425 |
| Volume (vph)           | 0    | 0    | 0    | 10   | 88   | 16   | 50   | 408   | 96   | 71   | 485  | 345  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 10   | 88   | 16   | 50   | 408   | 96   | 71   | 485  | 345  |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 8    | 0    | 0    | 11    | 0    | 0    | 0    | 143  |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 106  | 0    | 0    | 543   | 0    | 0    | 556  | 202  |
| Parking (#/hr)         |      |      |      | 0    | 0    | 0    | 0    | 0     | 0    |      |      | 0    |
| Turn Type              |      |      |      |      | Perm |      |      | Perm  |      |      | Perm | Perm |
| Protected Phases       |      |      |      |      |      | 6    |      |       | 8    |      |      | 4    |
| Permitted Phases       |      |      |      |      | 6    |      |      | 8     |      |      | 4    | 4    |
| Actuated Green, G (s)  |      |      |      |      | 22.0 |      |      | 42.0  |      |      | 42.0 | 42.0 |
| Effective Green, g (s) |      |      |      |      | 21.0 |      |      | 41.0  |      |      | 41.0 | 41.0 |
| Actuated g/C Ratio     |      |      |      |      | 0.30 |      |      | 0.59  |      |      | 0.59 | 0.59 |
| Clearance Time (s)     |      |      |      |      | 3.0  |      |      | 3.0   |      |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |      |      |      |      | 491  |      |      | 887   |      |      | 966  | 835  |
| v/s Ratio Prot         |      |      |      |      |      |      |      |       |      |      |      |      |
| v/s Ratio Perm         |      |      |      |      | 0.06 |      |      | c0.36 |      |      | 0.34 | 0.14 |
| v/c Ratio              |      |      |      |      | 0.22 |      |      | 0.61  |      |      | 0.58 | 0.24 |
| Uniform Delay, d1      |      |      |      |      | 18.3 |      |      | 9.4   |      |      | 9.1  | 7.0  |
| Progression Factor     |      |      |      |      | 1.00 |      |      | 0.35  |      |      | 1.50 | 4.76 |
| Incremental Delay, d2  |      |      |      |      | 1.0  |      |      | 2.1   |      |      | 2.3  | 0.6  |
| Delay (s)              |      |      |      |      | 19.3 |      |      | 5.4   |      |      | 15.9 | 33.9 |
| Level of Service       |      |      |      |      | B    |      |      | A     |      |      | B    | C    |
| Approach Delay (s)     |      | 0.0  |      |      | 19.3 |      |      | 5.4   |      |      | 22.8 |      |
| Approach LOS           |      | A    |      |      | B    |      |      | A     |      |      | C    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 16.4  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.48  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 75.7% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3426: L Street & 19th Street

7/11/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT                  | SBR  |
|-----------------------------------|------|------|-------|------|------|------|------|------|------|------|----------------------|------|
| Lane Configurations               |      |      |       |      | ↑↑   |      |      |      |      |      | ↑↑↑                  |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900                 | 1900 |
| Total Lost time (s)               |      |      |       |      | 4.0  |      |      |      |      |      | 4.0                  |      |
| Lane Util. Factor                 |      |      |       |      | 0.95 |      |      |      |      |      | 0.91                 |      |
| Frt                               |      |      |       |      | 1.00 |      |      |      |      |      | 0.98                 |      |
| Flt Protected                     |      |      |       |      | 1.00 |      |      |      |      |      | 1.00                 |      |
| Satd. Flow (prot)                 |      |      |       |      | 3347 |      |      |      |      |      | 4827                 |      |
| Flt Permitted                     |      |      |       |      | 1.00 |      |      |      |      |      | 1.00                 |      |
| Satd. Flow (perm)                 |      |      |       |      | 3347 |      |      |      |      |      | 4827                 |      |
| Volume (vph)                      | 0    | 0    | 0     | 72   | 732  | 0    | 0    | 0    | 0    | 0    | 358                  | 49   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00                 | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 72   | 732  | 0    | 0    | 0    | 0    | 0    | 358                  | 49   |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 0    | 15   | 0    | 0    | 0    | 0    | 0    | 30                   | 0    |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 0    | 789  | 0    | 0    | 0    | 0    | 0    | 377                  | 0    |
| Parking (#/hr)                    |      | 0    | 0     | 0    | 0    |      |      |      |      | 0    | 0                    | 0    |
| Turn Type                         |      |      |       |      | Perm |      |      |      |      |      |                      |      |
| Protected Phases                  |      |      |       |      | 6    |      |      |      |      |      | 4                    |      |
| Permitted Phases                  |      |      |       |      | 6    |      |      |      |      |      |                      |      |
| Actuated Green, G (s)             |      |      |       |      | 24.0 |      |      |      |      |      | 20.0                 |      |
| Effective Green, g (s)            |      |      |       |      | 23.0 |      |      |      |      |      | 19.0                 |      |
| Actuated g/C Ratio                |      |      |       |      | 0.46 |      |      |      |      |      | 0.38                 |      |
| Clearance Time (s)                |      |      |       |      | 3.0  |      |      |      |      |      | 3.0                  |      |
| Lane Grp Cap (vph)                |      |      |       |      | 1540 |      |      |      |      |      | 1834                 |      |
| v/s Ratio Prot                    |      |      |       |      |      |      |      |      |      |      | c0.08                |      |
| v/s Ratio Perm                    |      |      |       |      | 0.24 |      |      |      |      |      |                      |      |
| v/c Ratio                         |      |      |       |      | 0.51 |      |      |      |      |      | 0.21                 |      |
| Uniform Delay, d1                 |      |      |       |      | 9.5  |      |      |      |      |      | 10.4                 |      |
| Progression Factor                |      |      |       |      | 0.45 |      |      |      |      |      | 0.76                 |      |
| Incremental Delay, d2             |      |      |       |      | 1.1  |      |      |      |      |      | 0.2                  |      |
| Delay (s)                         |      |      |       |      | 5.4  |      |      |      |      |      | 8.2                  |      |
| Level of Service                  |      |      |       |      | A    |      |      |      |      |      | A                    |      |
| Approach Delay (s)                |      | 0.0  |       |      | 5.4  |      |      | 0.0  |      |      | 8.2                  |      |
| Approach LOS                      |      | A    |       |      | A    |      |      | A    |      |      | A                    |      |
| <b>Intersection Summary</b>       |      |      |       |      |      |      |      |      |      |      |                      |      |
| HCM Average Control Delay         |      |      | 6.3   |      |      |      |      |      |      |      | HCM Level of Service | A    |
| HCM Volume to Capacity ratio      |      |      | 0.37  |      |      |      |      |      |      |      |                      |      |
| Actuated Cycle Length (s)         |      |      | 50.0  |      |      |      |      |      |      |      | Sum of lost time (s) | 8.0  |
| Intersection Capacity Utilization |      |      | 37.0% |      |      |      |      |      |      |      | ICU Level of Service | A    |
| Analysis Period (min)             |      |      | 15    |      |      |      |      |      |      |      |                      |      |
| c Critical Lane Group             |      |      |       |      |      |      |      |      |      |      |                      |      |

# HCM Signalized Intersection Capacity Analysis

3427: L Street & 26th St

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      |      | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor      |      |      |      |      | 0.95 |      |      | 1.00 |      |      | 1.00 |      |
| Frt                    |      |      |      |      | 0.99 |      |      | 1.00 |      |      | 0.94 |      |
| Flt Protected          |      |      |      |      | 1.00 |      |      | 0.98 |      |      | 1.00 |      |
| Satd. Flow (prot)      |      |      |      |      | 3334 |      |      | 1649 |      |      | 1579 |      |
| Flt Permitted          |      |      |      |      | 1.00 |      |      | 0.94 |      |      | 1.00 |      |
| Satd. Flow (perm)      |      |      |      |      | 3334 |      |      | 1569 |      |      | 1579 |      |
| Volume (vph)           | 0    | 0    | 0    | 14   | 687  | 37   | 18   | 37   | 0    | 0    | 42   | 32   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 14   | 687  | 37   | 18   | 37   | 0    | 0    | 42   | 32   |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 8    | 0    | 0    | 0    | 0    | 0    | 19   | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 730  | 0    | 0    | 55   | 0    | 0    | 55   | 0    |
| Parking (#/hr)         |      |      |      | 0    | 0    | 0    | 0    | 0    |      |      | 0    | 0    |
| Turn Type              |      |      |      | Perm |      |      | Perm |      |      |      |      |      |
| Protected Phases       |      |      |      |      | 8    |      |      | 2    |      |      | 6    |      |
| Permitted Phases       |      |      |      | 8    |      |      | 2    |      |      |      |      |      |
| Actuated Green, G (s)  |      |      |      |      | 23.0 |      |      | 21.0 |      |      | 21.0 |      |
| Effective Green, g (s) |      |      |      |      | 22.0 |      |      | 20.0 |      |      | 20.0 |      |
| Actuated g/C Ratio     |      |      |      |      | 0.44 |      |      | 0.40 |      |      | 0.40 |      |
| Clearance Time (s)     |      |      |      |      | 3.0  |      |      | 3.0  |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      |      |      |      | 1467 |      |      | 628  |      |      | 632  |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      | 0.03 |      |
| v/s Ratio Perm         |      |      |      |      | 0.22 |      |      | 0.04 |      |      |      |      |
| v/c Ratio              |      |      |      |      | 0.50 |      |      | 0.09 |      |      | 0.09 |      |
| Uniform Delay, d1      |      |      |      |      | 10.0 |      |      | 9.3  |      |      | 9.3  |      |
| Progression Factor     |      |      |      |      | 1.00 |      |      | 0.74 |      |      | 1.00 |      |
| Incremental Delay, d2  |      |      |      |      | 1.2  |      |      | 0.3  |      |      | 0.3  |      |
| Delay (s)              |      |      |      |      | 11.2 |      |      | 7.2  |      |      | 9.6  |      |
| Level of Service       |      |      |      |      | B    |      |      | A    |      |      | A    |      |
| Approach Delay (s)     |      | 0.0  |      |      | 11.2 |      |      | 7.2  |      |      | 9.6  |      |
| Approach LOS           |      | A    |      |      | B    |      |      | A    |      |      | A    |      |

## Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.9  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.30  |                      |     |
| Actuated Cycle Length (s)         | 50.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 36.9% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3428: J Street & 29th St off ramp

7/11/2005



| Movement               | EBT   | EBR  | SBL   | SBT   | SWL2 | SWL  |
|------------------------|-------|------|-------|-------|------|------|
| Lane Configurations    | ↑↑↑   |      |       | ↑↑↑   |      | ↘↘   |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900  | 1900  | 1900 | 1900 |
| Total Lost time (s)    | 4.0   |      |       | 4.0   |      | 4.0  |
| Lane Util. Factor      | 0.91  |      |       | 0.91  |      | 0.97 |
| Frt                    | 0.96  |      |       | 1.00  |      | 1.00 |
| Flt Protected          | 1.00  |      |       | 1.00  |      | 0.95 |
| Satd. Flow (prot)      | 4733  |      |       | 4893  |      | 3433 |
| Flt Permitted          | 1.00  |      |       | 1.00  |      | 0.95 |
| Satd. Flow (perm)      | 4733  |      |       | 4893  |      | 3433 |
| Volume (vph)           | 700   | 230  | 34    | 327   | 386  | 602  |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 700   | 230  | 34    | 327   | 386  | 602  |
| RTOR Reduction (vph)   | 85    | 0    | 0     | 0     | 0    | 162  |
| Lane Group Flow (vph)  | 845   | 0    | 0     | 361   | 0    | 826  |
| Parking (#/hr)         | 0     | 0    |       | 0     |      |      |
| Turn Type              |       |      | Split |       | Perm |      |
| Protected Phases       | 2     |      | 8     | 8     |      | 4    |
| Permitted Phases       |       |      |       |       | 4    |      |
| Actuated Green, G (s)  | 19.0  |      |       | 17.0  |      | 25.0 |
| Effective Green, g (s) | 18.0  |      |       | 16.0  |      | 24.0 |
| Actuated g/C Ratio     | 0.26  |      |       | 0.23  |      | 0.34 |
| Clearance Time (s)     | 3.0   |      |       | 3.0   |      | 3.0  |
| Lane Grp Cap (vph)     | 1217  |      |       | 1118  |      | 1177 |
| v/s Ratio Prot         | c0.18 |      |       | c0.07 |      |      |
| v/s Ratio Perm         |       |      |       |       |      | 0.24 |
| v/c Ratio              | 0.69  |      |       | 0.32  |      | 0.70 |
| Uniform Delay, d1      | 23.5  |      |       | 22.5  |      | 19.9 |
| Progression Factor     | 0.51  |      |       | 1.00  |      | 1.00 |
| Incremental Delay, d2  | 3.1   |      |       | 0.8   |      | 3.5  |
| Delay (s)              | 15.0  |      |       | 23.3  |      | 23.4 |
| Level of Service       | B     |      |       | C     |      | C    |
| Approach Delay (s)     | 15.0  |      |       | 23.3  |      | 23.4 |
| Approach LOS           | B     |      |       | C     |      | C    |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 19.9  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.60  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 63.9% | ICU Level of Service | B    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

# HCM Signalized Intersection Capacity Analysis

3429: J Street & Alhambra

7/11/2005



| Movement                          | EBL   | EBT   | EBR  | WBL   | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|-----------------------------------|-------|-------|------|-------|------|------|------|------|------|------|-------|------|
| Lane Configurations               | ↖     | ↕     |      | ↖     | ↕    | ↗    |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)               | 4.0   | 4.0   |      | 4.0   | 4.0  | 4.0  |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor                 | 1.00  | 0.95  |      | 0.95  | 0.95 | 1.00 |      | 0.95 |      |      | 0.95  |      |
| Fr <sub>t</sub>                   | 1.00  | 0.96  |      | 1.00  | 1.00 | 0.85 |      | 0.95 |      |      | 1.00  |      |
| Fl <sub>t</sub> Protected         | 0.95  | 1.00  |      | 0.95  | 0.95 | 1.00 |      | 1.00 |      |      | 1.00  |      |
| Satd. Flow (prot)                 | 1770  | 3224  |      | 1681  | 1681 | 1425 |      | 3202 |      |      | 3348  |      |
| Fl <sub>t</sub> Permitted         | 0.95  | 1.00  |      | 0.95  | 0.95 | 1.00 |      | 1.00 |      |      | 0.91  |      |
| Satd. Flow (perm)                 | 1770  | 3224  |      | 1681  | 1681 | 1425 |      | 3202 |      |      | 3045  |      |
| Volume (vph)                      | 152   | 603   | 228  | 531   | 0    | 138  | 0    | 242  | 113  | 29   | 321   | 0    |
| Peak-hour factor, PHF             | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)                   | 152   | 603   | 228  | 531   | 0    | 138  | 0    | 242  | 113  | 29   | 321   | 0    |
| RTOR Reduction (vph)              | 0     | 56    | 0    | 0     | 0    | 103  | 0    | 79   | 0    | 0    | 0     | 0    |
| Lane Group Flow (vph)             | 152   | 775   | 0    | 266   | 265  | 35   | 0    | 276  | 0    | 0    | 350   | 0    |
| Parking (#/hr)                    |       | 0     | 0    |       |      | 0    |      | 0    | 0    |      | 0     |      |
| Turn Type                         | Split |       |      | Split |      |      | Perm |      |      |      | Perm  |      |
| Protected Phases                  | 2     | 2     |      | 6     | 6    |      | 8    |      |      |      | 4     |      |
| Permitted Phases                  |       |       |      |       |      |      | 6    |      |      |      | 4     |      |
| Actuated Green, G (s)             | 25.0  | 25.0  |      | 19.0  | 19.0 | 19.0 | 17.0 |      |      |      | 17.0  |      |
| Effective Green, g (s)            | 24.0  | 24.0  |      | 18.0  | 18.0 | 18.0 | 16.0 |      |      |      | 16.0  |      |
| Actuated g/C Ratio                | 0.34  | 0.34  |      | 0.26  | 0.26 | 0.26 | 0.23 |      |      |      | 0.23  |      |
| Clearance Time (s)                | 3.0   | 3.0   |      | 3.0   | 3.0  | 3.0  | 3.0  |      |      |      | 3.0   |      |
| Lane Grp Cap (vph)                | 607   | 1105  |      | 432   | 432  | 366  | 732  |      |      |      | 696   |      |
| v/s Ratio Prot                    | 0.09  | c0.24 |      | c0.16 | 0.16 |      | 0.09 |      |      |      |       |      |
| v/s Ratio Perm                    |       |       |      |       |      |      | 0.02 |      |      |      | c0.11 |      |
| v/c Ratio                         | 0.25  | 0.70  |      | 0.62  | 0.61 | 0.10 | 0.38 |      |      |      | 0.50  |      |
| Uniform Delay, d <sub>1</sub>     | 16.5  | 19.9  |      | 22.9  | 22.9 | 19.8 | 22.8 |      |      |      | 23.5  |      |
| Progression Factor                | 0.55  | 0.56  |      | 1.00  | 1.00 | 1.00 | 0.39 |      |      |      | 1.00  |      |
| Incremental Delay, d <sub>2</sub> | 0.9   | 3.5   |      | 6.4   | 6.4  | 0.5  | 1.4  |      |      |      | 2.6   |      |
| Delay (s)                         | 10.1  | 14.6  |      | 29.4  | 29.3 | 20.3 | 10.3 |      |      |      | 26.1  |      |
| Level of Service                  | B     | B     |      | C     | C    | C    | B    |      |      |      | C     |      |
| Approach Delay (s)                | 13.9  |       |      | 27.5  |      |      | 10.3 |      |      |      | 26.1  |      |
| Approach LOS                      | B     |       |      | C     |      |      | B    |      |      |      | C     |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 19.0  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.62  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 72.0% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3435: N Street & 29th Street

7/11/2005



| Movement               | EBT  | EBR   | EBR2 | WBL2  | WBL   | WBT   | SBL2 | SBL   | SBT  | SBR  |
|------------------------|------|-------|------|-------|-------|-------|------|-------|------|------|
| Lane Configurations    | ↑    | ↔     |      |       | ↔     | ↑     |      | ↔     | ↑    |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900  | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    | 4.0  | 4.0   |      |       | 4.0   | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor      | 1.00 | 1.00  |      |       | 0.95  | 0.95  |      | 0.97  | 0.95 |      |
| Fr't                   | 1.00 | 0.85  |      |       | 1.00  | 1.00  |      | 1.00  | 1.00 |      |
| Flt Protected          | 1.00 | 1.00  |      |       | 0.95  | 0.98  |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)      | 1676 | 1425  |      |       | 1681  | 1729  |      | 3433  | 3346 |      |
| Flt Permitted          | 1.00 | 1.00  |      |       | 0.95  | 0.98  |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)      | 1676 | 1425  |      |       | 1681  | 1729  |      | 3433  | 3346 |      |
| Volume (vph)           | 178  | 153   | 29   | 155   | 105   | 98    | 25   | 537   | 299  | 10   |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 178  | 153   | 29   | 155   | 105   | 98    | 25   | 537   | 299  | 10   |
| RTOR Reduction (vph)   | 0    | 9     | 0    | 0     | 0     | 0     | 0    | 0     | 4    | 0    |
| Lane Group Flow (vph)  | 178  | 173   | 0    | 0     | 174   | 184   | 0    | 562   | 306  | 0    |
| Parking (#/hr)         | 0    | 0     | 0    |       |       |       |      |       | 0    |      |
| Turn Type              |      | Perm  |      | Split | Split |       | Perm | Perm  |      |      |
| Protected Phases       | 4    |       |      | 8     | 8     | 8     |      |       | 6    |      |
| Permitted Phases       |      | 4     |      |       |       |       | 6    | 6     |      |      |
| Actuated Green, G (s)  | 20.0 | 20.0  |      |       | 19.0  | 19.0  |      | 22.0  | 22.0 |      |
| Effective Green, g (s) | 19.0 | 19.0  |      |       | 18.0  | 18.0  |      | 21.0  | 21.0 |      |
| Actuated g/C Ratio     | 0.27 | 0.27  |      |       | 0.26  | 0.26  |      | 0.30  | 0.30 |      |
| Clearance Time (s)     | 3.0  | 3.0   |      |       | 3.0   | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     | 455  | 387   |      |       | 432   | 445   |      | 1030  | 1004 |      |
| v/s Ratio Prot         | 0.11 |       |      |       | 0.10  | c0.11 |      |       | 0.09 |      |
| v/s Ratio Perm         |      | c0.12 |      |       |       |       |      | c0.16 |      |      |
| v/c Ratio              | 0.39 | 0.45  |      |       | 0.40  | 0.41  |      | 0.55  | 0.30 |      |
| Uniform Delay, d1      | 20.8 | 21.1  |      |       | 21.5  | 21.6  |      | 20.5  | 18.9 |      |
| Progression Factor     | 0.59 | 0.56  |      |       | 0.45  | 0.87  |      | 1.10  | 1.09 |      |
| Incremental Delay, d2  | 2.5  | 3.6   |      |       | 2.4   | 1.9   |      | 1.9   | 0.7  |      |
| Delay (s)              | 14.7 | 15.6  |      |       | 12.0  | 20.6  |      | 24.6  | 21.3 |      |
| Level of Service       | B    | B     |      |       | B     | C     |      | C     | C    |      |
| Approach Delay (s)     | 15.1 |       |      |       |       | 16.4  |      |       | 23.4 |      |
| Approach LOS           | B    |       |      |       |       | B     |      |       | C    |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 20.0  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.47  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 47.1% | ICU Level of Service | A    |
| Analysis Period (min)             | 15    |                      |      |
| c: Critical Lane Group            |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3436: Capitol & Alhambra

7/11/2005



| Movement               | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|-------|-------|------|-------|-------|------|------|-------|------|------|------|------|
| Lane Configurations    |       | ↔     |      |       | ↔     |      | ↖    | ↗     | ↗    | ↖    | ↗    | ↖    |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |       | 4.0   |      |       | 4.0   |      | 4.0  | 4.0   | 4.0  | 4.0  | 4.0  | 4.0  |
| Lane Util. Factor      |       | 0.95  |      |       | 0.95  |      | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Fr't                   |       | 0.98  |      |       | 0.98  |      | 1.00 | 1.00  | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected          |       | 0.99  |      |       | 1.00  |      | 0.95 | 1.00  | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot)      |       | 3262  |      |       | 3285  |      | 1593 | 1676  | 1425 | 1593 | 1676 | 1425 |
| Flt Permitted          |       | 0.99  |      |       | 1.00  |      | 0.36 | 1.00  | 1.00 | 0.27 | 1.00 | 1.00 |
| Satd. Flow (perm)      |       | 3262  |      |       | 3285  |      | 600  | 1676  | 1425 | 460  | 1676 | 1425 |
| Volume (vph)           | 44    | 230   | 50   | 29    | 544   | 93   | 48   | 456   | 104  | 94   | 385  | 52   |
| Peak-hour factor, PHF  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 44    | 230   | 50   | 29    | 544   | 93   | 48   | 456   | 104  | 94   | 385  | 52   |
| RTOR Reduction (vph)   | 0     | 22    | 0    | 0     | 18    | 0    | 0    | 0     | 59   | 0    | 0    | 33   |
| Lane Group Flow (vph)  | 0     | 302   | 0    | 0     | 648   | 0    | 48   | 456   | 46   | 94   | 385  | 19   |
| Parking (#/hr)         | 0     | 0     | 0    | 0     | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type              | Split |       |      | Split |       |      | Perm |       | Perm | Perm |      | Perm |
| Protected Phases       | 4     | 4     |      | 8     | 8     |      |      | 2     |      |      |      | 6    |
| Permitted Phases       |       |       |      |       |       |      | 2    |       | 2    | 6    |      | 6    |
| Actuated Green, G (s)  |       | 17.0  |      |       | 18.0  |      | 26.0 | 26.0  | 26.0 | 26.0 | 26.0 | 26.0 |
| Effective Green, g (s) |       | 16.0  |      |       | 17.0  |      | 25.0 | 25.0  | 25.0 | 25.0 | 25.0 | 25.0 |
| Actuated g/C Ratio     |       | 0.23  |      |       | 0.24  |      | 0.36 | 0.36  | 0.36 | 0.36 | 0.36 | 0.36 |
| Clearance Time (s)     |       | 3.0   |      |       | 3.0   |      | 3.0  | 3.0   | 3.0  | 3.0  | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |       | 746   |      |       | 798   |      | 214  | 599   | 509  | 164  | 599  | 509  |
| v/s Ratio Prot         |       | c0.09 |      |       | c0.20 |      |      | c0.27 |      |      | 0.23 |      |
| v/s Ratio Perm         |       |       |      |       |       |      | 0.08 |       | 0.03 | 0.20 |      | 0.01 |
| v/c Ratio              |       | 0.41  |      |       | 0.81  |      | 0.22 | 0.76  | 0.09 | 0.57 | 0.64 | 0.04 |
| Uniform Delay, d1      |       | 23.0  |      |       | 25.0  |      | 15.7 | 19.9  | 14.9 | 18.2 | 18.8 | 14.7 |
| Progression Factor     |       | 1.11  |      |       | 1.00  |      | 1.06 | 0.97  | 1.32 | 0.53 | 0.55 | 0.33 |
| Incremental Delay, d2  |       | 1.6   |      |       | 8.8   |      | 1.6  | 6.1   | 0.2  | 11.9 | 4.5  | 0.1  |
| Delay (s)              |       | 27.0  |      |       | 33.8  |      | 18.4 | 25.3  | 20.0 | 21.6 | 14.8 | 4.9  |
| Level of Service       |       | C     |      |       | C     |      | B    | C     | C    | C    | B    | A    |
| Approach Delay (s)     |       | 27.0  |      |       | 33.8  |      |      | 23.9  |      |      | 15.0 |      |
| Approach LOS           |       | C     |      |       | C     |      |      | C     |      |      | B    |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 25.2  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.68  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 70.6% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3437: P Street & 29th St off ramp

7/11/2005



| Movement               | WBL  | WBT   | SBT   | SBR  | SWL   | SWR  |
|------------------------|------|-------|-------|------|-------|------|
| Lane Configurations    | ↵    | ↑↑    | ↑↑↵   |      | ↵↵    | ↗    |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900  | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0  | 4.0   | 4.0   |      | 4.0   | 4.0  |
| Lane Util. Factor      | 1.00 | 0.95  | 0.91  |      | 0.97  | 0.91 |
| Frt                    | 1.00 | 1.00  | 0.96  |      | 0.98  | 0.85 |
| Flt Protected          | 0.95 | 1.00  | 1.00  |      | 0.96  | 1.00 |
| Satd. Flow (prot)      | 1593 | 3362  | 4711  |      | 3397  | 1441 |
| Flt Permitted          | 0.95 | 1.00  | 1.00  |      | 0.96  | 1.00 |
| Satd. Flow (perm)      | 1593 | 3362  | 4711  |      | 3397  | 1441 |
| Volume (vph)           | 83   | 619   | 297   | 114  | 598   | 374  |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 83   | 619   | 297   | 114  | 598   | 374  |
| RTOR Reduction (vph)   | 62   | 0     | 86    | 0    | 0     | 0    |
| Lane Group Flow (vph)  | 21   | 619   | 325   | 0    | 685   | 287  |
| Parking (#/hr)         | 0    | 0     | 0     | 0    |       |      |
| Turn Type              | Perm |       |       |      |       | Perm |
| Protected Phases       |      | 6     | 7     |      | 8     |      |
| Permitted Phases       | 6    |       |       |      |       | 8    |
| Actuated Green, G (s)  | 19.0 | 19.0  | 18.0  |      | 24.0  | 24.0 |
| Effective Green, g (s) | 18.0 | 18.0  | 17.0  |      | 23.0  | 23.0 |
| Actuated g/C Ratio     | 0.26 | 0.26  | 0.24  |      | 0.33  | 0.33 |
| Clearance Time (s)     | 3.0  | 3.0   | 3.0   |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)     | 410  | 865   | 1144  |      | 1116  | 473  |
| v/s Ratio Prot         |      | c0.18 | c0.07 |      | c0.20 |      |
| v/s Ratio Perm         | 0.01 |       |       |      |       | 0.20 |
| v/c Ratio              | 0.05 | 0.72  | 0.28  |      | 0.61  | 0.61 |
| Uniform Delay, d1      | 19.6 | 23.7  | 21.5  |      | 19.8  | 19.7 |
| Progression Factor     | 0.29 | 0.56  | 0.19  |      | 1.00  | 1.00 |
| Incremental Delay, d2  | 0.2  | 4.7   | 0.6   |      | 2.5   | 5.7  |
| Delay (s)              | 5.8  | 17.9  | 4.6   |      | 22.3  | 25.4 |
| Level of Service       | A    | B     | A     |      | C     | C    |
| Approach Delay (s)     |      | 16.5  | 4.6   |      | 23.2  |      |
| Approach LOS           |      | B     | A     |      | C     |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 17.3  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.55  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 56.4% | ICU Level of Service | B    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |



HCM Signalized Intersection Capacity Analysis  
 3438: P Street & Alhambra

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL   | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|-------|------|-------|------|------|
| Lane Configurations    |      |      |      |      | ↕↕↕  |      | ↖    | ↗     |      | ↖     | ↗    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      | 4.0  | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor      |      |      |      |      | 0.91 |      | 1.00 | 1.00  |      | 1.00  | 1.00 |      |
| Frt                    |      |      |      |      | 0.96 |      | 1.00 | 0.94  |      | 1.00  | 0.96 |      |
| Flt Protected          |      |      |      |      | 1.00 |      | 0.95 | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)      |      |      |      |      | 4887 |      | 1770 | 1760  |      | 1770  | 1792 |      |
| Flt Permitted          |      |      |      |      | 1.00 |      | 0.95 | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)      |      |      |      |      | 4887 |      | 1770 | 1760  |      | 1770  | 1792 |      |
| Volume (vph)           | 0    | 0    | 0    | 75   | 671  | 229  | 103  | 347   | 201  | 187   | 256  | 86   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 75   | 671  | 229  | 103  | 347   | 201  | 187   | 256  | 86   |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 79   | 0    | 0    | 30    | 0    | 0     | 17   | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 896  | 0    | 103  | 518   | 0    | 187   | 325  | 0    |
| Turn Type              |      |      |      | Perm |      |      | Prot |       |      | Prot  |      |      |
| Protected Phases       |      |      |      |      | 6    |      | 3    | 8     |      | 7     | 4    |      |
| Permitted Phases       |      |      |      | 6    |      |      |      |       |      |       |      |      |
| Actuated Green, G (s)  |      |      |      |      | 18.0 |      | 10.0 | 30.0  |      | 13.0  | 33.0 |      |
| Effective Green, g (s) |      |      |      |      | 17.0 |      | 9.0  | 29.0  |      | 12.0  | 32.0 |      |
| Actuated g/C Ratio     |      |      |      |      | 0.24 |      | 0.13 | 0.41  |      | 0.17  | 0.46 |      |
| Clearance Time (s)     |      |      |      |      | 3.0  |      | 3.0  | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     |      |      |      |      | 1187 |      | 228  | 729   |      | 303   | 819  |      |
| v/s Ratio Prot         |      |      |      |      |      |      | 0.06 | c0.29 |      | c0.11 | 0.18 |      |
| v/s Ratio Perm         |      |      |      |      | 0.18 |      |      |       |      |       |      |      |
| v/c Ratio              |      |      |      |      | 0.76 |      | 0.45 | 0.71  |      | 0.62  | 0.40 |      |
| Uniform Delay, d1      |      |      |      |      | 24.6 |      | 28.2 | 17.0  |      | 26.9  | 12.6 |      |
| Progression Factor     |      |      |      |      | 1.00 |      | 1.00 | 1.00  |      | 0.74  | 0.69 |      |
| Incremental Delay, d2  |      |      |      |      | 4.5  |      | 6.3  | 5.8   |      | 7.5   | 1.2  |      |
| Delay (s)              |      |      |      |      | 29.1 |      | 34.6 | 22.8  |      | 27.4  | 9.9  |      |
| Level of Service       |      |      |      |      | C    |      | C    | C     |      | C     | A    |      |
| Approach Delay (s)     |      | 0.0  |      |      | 29.1 |      |      | 24.7  |      |       | 16.1 |      |
| Approach LOS           |      | A    |      |      | C    |      |      | C     |      |       | B    |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 24.5  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.70  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 70.5% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 3444: Q Street & 29th Street

7/11/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|-------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑↑    |      |      |      |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      |      |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 0.95  |      |      |      |      |      |      |      |      | 0.91 |      |
| Frt                    |      | 0.97  |      |      |      |      |      |      |      |      | 1.00 |      |
| Flt Protected          |      | 1.00  |      |      |      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (prot)      |      | 3450  |      |      |      |      |      |      |      |      | 5022 |      |
| Flt Permitted          |      | 1.00  |      |      |      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (perm)      |      | 3450  |      |      |      |      |      |      |      |      | 5022 |      |
| Volume (vph)           | 0    | 353   | 71   | 0    | 0    | 0    | 0    | 0    | 0    | 249  | 739  | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 353   | 71   | 0    | 0    | 0    | 0    | 0    | 0    | 249  | 739  | 0    |
| RTOR Reduction (vph)   | 0    | 24    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 87   | 0    |
| Lane Group Flow (vph)  | 0    | 400   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 901  | 0    |
| Turn Type              |      |       |      |      |      |      |      |      |      | Perm |      |      |
| Protected Phases       |      | 2     |      |      |      |      |      |      |      |      | 4    |      |
| Permitted Phases       |      |       |      |      |      |      |      |      |      | 4    |      |      |
| Actuated Green, G (s)  |      | 31.0  |      |      |      |      |      |      |      |      | 33.0 |      |
| Effective Green, g (s) |      | 30.0  |      |      |      |      |      |      |      |      | 32.0 |      |
| Actuated g/C Ratio     |      | 0.43  |      |      |      |      |      |      |      |      | 0.46 |      |
| Clearance Time (s)     |      | 3.0   |      |      |      |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 1479  |      |      |      |      |      |      |      |      | 2296 |      |
| v/s Ratio Prot         |      | c0.12 |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |       |      |      |      |      |      |      |      |      | 0.18 |      |
| v/c Ratio              |      | 0.27  |      |      |      |      |      |      |      |      | 0.39 |      |
| Uniform Delay, d1      |      | 12.9  |      |      |      |      |      |      |      |      | 12.6 |      |
| Progression Factor     |      | 1.00  |      |      |      |      |      |      |      |      | 0.19 |      |
| Incremental Delay, d2  |      | 0.5   |      |      |      |      |      |      |      |      | 0.4  |      |
| Delay (s)              |      | 13.4  |      |      |      |      |      |      |      |      | 2.9  |      |
| Level of Service       |      | B     |      |      |      |      |      |      |      |      | A    |      |
| Approach Delay (s)     |      | 13.4  |      |      | 0.0  |      |      | 0.0  |      |      | 2.9  |      |
| Approach LOS           |      | B     |      |      | A    |      |      | A    |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 6.0   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.33  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 38.0% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
3467: N Street & Alhambra

7/11/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|-------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations    |      | ↕     |      |      | ↕    |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      | 4.0  |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00  |      |      | 1.00 |      |      | 1.00  |      |      | 1.00 |      |
| Frt                    |      | 0.96  |      |      | 0.99 |      |      | 0.99  |      |      | 0.99 |      |
| Flt Protected          |      | 0.98  |      |      | 0.99 |      |      | 1.00  |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 1588  |      |      | 1634 |      |      | 1648  |      |      | 1662 |      |
| Flt Permitted          |      | 0.80  |      |      | 0.88 |      |      | 0.97  |      |      | 0.99 |      |
| Satd. Flow (perm)      |      | 1291  |      |      | 1447 |      |      | 1602  |      |      | 1640 |      |
| Volume (vph)           | 135  | 154   | 108  | 58   | 185  | 30   | 28   | 477   | 61   | 12   | 410  | 24   |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 135  | 154   | 108  | 58   | 185  | 30   | 28   | 477   | 61   | 12   | 410  | 24   |
| RTOR Reduction (vph)   | 0    | 19    | 0    | 0    | 6    | 0    | 0    | 6     | 0    | 0    | 3    | 0    |
| Lane Group Flow (vph)  | 0    | 378   |      | 0    | 0    | 267  | 0    | 0     | 560  | 0    | 0    | 443  |
| Parking (#/hr)         | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |       |      | Perm |      |      | Perm |       |      | Perm |      |      |
| Protected Phases       |      | 4     |      |      | 8    |      |      | 2     |      |      | 6    |      |
| Permitted Phases       | 4    |       |      | 8    |      |      | 2    |       |      | 6    |      |      |
| Actuated Green, G (s)  |      | 30.0  |      |      | 30.0 |      |      | 34.0  |      |      | 34.0 |      |
| Effective Green, g (s) |      | 29.0  |      |      | 29.0 |      |      | 33.0  |      |      | 33.0 |      |
| Actuated g/C Ratio     |      | 0.41  |      |      | 0.41 |      |      | 0.47  |      |      | 0.47 |      |
| Clearance Time (s)     |      | 3.0   |      |      | 3.0  |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 535   |      |      | 599  |      |      | 755   |      |      | 773  |      |
| v/s Ratio Prot         |      |       |      |      |      |      |      |       |      |      |      |      |
| v/s Ratio Perm         |      | c0.29 |      |      | 0.18 |      |      | c0.35 |      |      | 0.27 |      |
| v/c Ratio              |      | 0.71  |      |      | 0.45 |      |      | 0.74  |      |      | 0.57 |      |
| Uniform Delay, d1      |      | 17.0  |      |      | 14.7 |      |      | 15.0  |      |      | 13.4 |      |
| Progression Factor     |      | 0.61  |      |      | 1.00 |      |      | 0.65  |      |      | 0.29 |      |
| Incremental Delay, d2  |      | 7.1   |      |      | 2.4  |      |      | 4.3   |      |      | 2.4  |      |
| Delay (s)              |      | 17.5  |      |      | 17.1 |      |      | 14.1  |      |      | 6.3  |      |
| Level of Service       |      | B     |      |      | B    |      |      | B     |      |      | A    |      |
| Approach Delay (s)     |      | 17.5  |      |      | 17.1 |      |      | 14.1  |      |      | 6.3  |      |
| Approach LOS           |      | B     |      |      | B    |      |      | B     |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 13.3  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.72  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 84.8% | ICU Level of Service | E   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 5802: K Street & 29th Street

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑    | ↗    | ↖    | ↑     |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  | 4.0  | 4.0   |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00 | 1.00 | 1.00 | 1.00  |      |      |      |      |      | 0.91 |      |
| Frt                    |      | 1.00 | 0.85 | 1.00 | 1.00  |      |      |      |      |      | 0.96 |      |
| Flt Protected          |      | 1.00 | 1.00 | 0.95 | 1.00  |      |      |      |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 1863 | 1583 | 1770 | 1863  |      |      |      |      |      | 4859 |      |
| Flt Permitted          |      | 1.00 | 1.00 | 0.68 | 1.00  |      |      |      |      |      | 1.00 |      |
| Satd. Flow (perm)      |      | 1863 | 1583 | 1263 | 1863  |      |      |      |      |      | 4859 |      |
| Volume (vph)           | 0    | 123  | 90   | 196  | 513   | 0    | 0    | 0    | 0    | 69   | 710  | 297  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 123  | 90   | 196  | 513   | 0    | 0    | 0    | 0    | 69   | 710  | 297  |
| RTOR Reduction (vph)   | 0    | 0    | 42   | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 99   | 0    |
| Lane Group Flow (vph)  | 0    | 123  | 48   | 196  | 513   | 0    | 0    | 0    | 0    | 0    | 977  | 0    |
| Turn Type              |      |      | Perm | Perm |       |      |      |      |      |      | Perm |      |
| Protected Phases       |      | 4    |      |      | 8     |      |      |      |      |      |      | 6    |
| Permitted Phases       |      |      | 4    | 8    |       |      |      |      |      | 6    |      |      |
| Actuated Green, G (s)  |      | 37.0 | 37.0 | 37.0 | 37.0  |      |      |      |      |      | 27.0 |      |
| Effective Green, g (s) |      | 36.0 | 36.0 | 36.0 | 36.0  |      |      |      |      |      | 26.0 |      |
| Actuated g/C Ratio     |      | 0.51 | 0.51 | 0.51 | 0.51  |      |      |      |      |      | 0.37 |      |
| Clearance Time (s)     |      | 3.0  | 3.0  | 3.0  | 3.0   |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 958  | 814  | 650  | 958   |      |      |      |      |      | 1805 |      |
| v/s Ratio Prot         |      | 0.07 |      |      | c0.28 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      | 0.03 | 0.16 |       |      |      |      |      |      | 0.20 |      |
| v/c Ratio              |      | 0.13 | 0.06 | 0.30 | 0.54  |      |      |      |      |      | 0.54 |      |
| Uniform Delay, d1      |      | 8.8  | 8.5  | 9.8  | 11.4  |      |      |      |      |      | 17.3 |      |
| Progression Factor     |      | 0.68 | 1.13 | 0.67 | 0.64  |      |      |      |      |      | 0.67 |      |
| Incremental Delay, d2  |      | 0.3  | 0.1  | 1.1  | 2.0   |      |      |      |      |      | 0.9  |      |
| Delay (s)              |      | 6.3  | 9.7  | 7.7  | 9.3   |      |      |      |      |      | 12.6 |      |
| Level of Service       |      | A    | A    | A    | A     |      |      |      |      |      | B    |      |
| Approach Delay (s)     |      | 7.8  |      |      | 8.9   |      |      | 0.0  |      |      | 12.6 |      |
| Approach LOS           |      | A    |      |      | A     |      |      | A    |      |      | B    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.7  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.54  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 55.4% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

5848: J Street & 30th Street

7/11/2005



| Movement               | EBL2 | EBL  | EBT   | WBR2 | NBL   | NBT  | NBR  |
|------------------------|------|------|-------|------|-------|------|------|
| Lane Configurations    |      | ↵    | ↕↕↕   | ↗    | ↵     | ↕↕   |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor      |      | 0.86 | 0.86  |      | 0.91  | 0.91 |      |
| Fr't                   |      | 1.00 | 1.00  |      | 1.00  | 0.95 |      |
| Flt Protected          |      | 0.95 | 1.00  |      | 0.95  | 0.99 |      |
| Satd. Flow (prot)      |      | 1522 | 4646  |      | 1610  | 3186 |      |
| Flt Permitted          |      | 0.95 | 1.00  |      | 0.95  | 0.99 |      |
| Satd. Flow (perm)      |      | 1522 | 4646  |      | 1610  | 3186 |      |
| Volume (vph)           | 141  | 104  | 845   | 0    | 304   | 200  | 148  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 141  | 104  | 845   | 0    | 304   | 200  | 148  |
| RTOR Reduction (vph)   | 0    | 70   | 0     | 0    | 0     | 48   | 0    |
| Lane Group Flow (vph)  | 0    | 175  | 845   | 0    | 215   | 389  | 0    |
| Parking (#/hr)         |      |      | 0     | 0    |       |      | 0    |
| Turn Type              | Perm | Perm |       | Free | Perm  |      |      |
| Protected Phases       |      |      | 2     |      |       | 8    |      |
| Permitted Phases       | 2    | 2    |       | Free | 8     |      |      |
| Actuated Green, G (s)  |      | 32.0 | 32.0  |      | 32.0  | 32.0 |      |
| Effective Green, g (s) |      | 31.0 | 31.0  |      | 31.0  | 31.0 |      |
| Actuated g/C Ratio     |      | 0.44 | 0.44  |      | 0.44  | 0.44 |      |
| Clearance Time (s)     |      | 3.0  | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     |      | 674  | 2058  |      | 713   | 1411 |      |
| v/s Ratio Prot         |      |      | c0.18 |      |       |      |      |
| v/s Ratio Perm         |      | 0.12 |       |      | c0.13 | 0.12 |      |
| v/c Ratio              |      | 0.26 | 0.41  |      | 0.30  | 0.28 |      |
| Uniform Delay, d1      |      | 12.3 | 13.3  |      | 12.5  | 12.4 |      |
| Progression Factor     |      | 0.62 | 0.71  |      | 0.44  | 0.31 |      |
| Incremental Delay, d2  |      | 0.6  | 0.4   |      | 1.0   | 0.5  |      |
| Delay (s)              |      | 8.2  | 9.9   |      | 6.5   | 4.2  |      |
| Level of Service       |      | A    | A     |      | A     | A    |      |
| Approach Delay (s)     |      |      | 9.5   |      |       | 5.0  |      |
| Approach LOS           |      |      | A     |      |       | A    |      |

| Intersection Summary              |                     |                      |     |
|-----------------------------------|---------------------|----------------------|-----|
| HCM Average Control Delay         | 7.8                 | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.36                |                      |     |
| Actuated Cycle Length (s)         | 70.0                | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 35.7%               | ICU Level of Service | A   |
| Analysis Period (min)             | 15                  |                      |     |
| c                                 | Critical Lane Group |                      |     |

HCM Signalized Intersection Capacity Analysis  
5849: L Street & 30th Street

7/11/2005



| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|---------------------------|------|------|------|------|-------|------|------|-------|------|------|------|------|
| Lane Configurations       |      |      |      |      | ↑↑↑   |      | ↖    | ↑↑↑   |      |      |      |      |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |      |      |      |      | 4.0   |      | 4.0  | 4.0   |      |      |      |      |
| Lane Util. Factor         |      |      |      |      | 0.91  |      | 0.86 | 0.86  |      |      |      |      |
| Fr <sub>t</sub>           |      |      |      |      | 0.98  |      | 1.00 | 1.00  |      |      |      |      |
| Fl <sub>t</sub> Protected |      |      |      |      | 1.00  |      | 0.95 | 1.00  |      |      |      |      |
| Satd. Flow (prot)         |      |      |      |      | 4990  |      | 1522 | 4646  |      |      |      |      |
| Fl <sub>t</sub> Permitted |      |      |      |      | 1.00  |      | 0.95 | 1.00  |      |      |      |      |
| Satd. Flow (perm)         |      |      |      |      | 4990  |      | 1522 | 4646  |      |      |      |      |
| Volume (vph)              | 0    | 0    | 0    | 0    | 439   | 63   | 288  | 934   | 0    | 0    | 0    | 0    |
| Peak-hour factor, PHF     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 0    | 0    | 0    | 0    | 439   | 63   | 288  | 934   | 0    | 0    | 0    | 0    |
| RTOR Reduction (vph)      | 0    | 0    | 0    | 0    | 27    | 0    | 156  | 0     | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)     | 0    | 0    | 0    | 0    | 475   | 0    | 132  | 934   | 0    | 0    | 0    | 0    |
| Parking (#/hr)            |      |      |      |      |       | 0    |      | 0     |      |      |      |      |
| Turn Type                 |      |      |      |      |       |      | Perm |       |      |      |      |      |
| Protected Phases          |      |      |      |      | 6     |      |      | 8     |      |      |      |      |
| Permitted Phases          |      |      |      |      |       |      | 8    |       |      |      |      |      |
| Actuated Green, G (s)     |      |      |      |      | 31.0  |      | 33.0 | 33.0  |      |      |      |      |
| Effective Green, g (s)    |      |      |      |      | 30.0  |      | 32.0 | 32.0  |      |      |      |      |
| Actuated g/C Ratio        |      |      |      |      | 0.43  |      | 0.46 | 0.46  |      |      |      |      |
| Clearance Time (s)        |      |      |      |      | 3.0   |      | 3.0  | 3.0   |      |      |      |      |
| Lane Grp Cap (vph)        |      |      |      |      | 2139  |      | 696  | 2124  |      |      |      |      |
| v/s Ratio Prot            |      |      |      |      | c0.10 |      |      | c0.20 |      |      |      |      |
| v/s Ratio Perm            |      |      |      |      |       |      | 0.09 |       |      |      |      |      |
| v/c Ratio                 |      |      |      |      | 0.22  |      | 0.19 | 0.44  |      |      |      |      |
| Uniform Delay, d1         |      |      |      |      | 12.6  |      | 11.3 | 12.9  |      |      |      |      |
| Progression Factor        |      |      |      |      | 1.13  |      | 0.03 | 0.32  |      |      |      |      |
| Incremental Delay, d2     |      |      |      |      | 0.2   |      | 0.4  | 0.5   |      |      |      |      |
| Delay (s)                 |      |      |      |      | 14.6  |      | 0.8  | 4.6   |      |      |      |      |
| Level of Service          |      |      |      |      | B     |      | A    | A     |      |      |      |      |
| Approach Delay (s)        |      | 0.0  |      |      | 14.6  |      |      | 3.7   |      |      | 0.0  |      |
| Approach LOS              |      | A    |      |      | B     |      |      | A     |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 6.9   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.33  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 37.6% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
5880: N Street & 30th Street

7/11/2005



| Movement               | EBL  | EBT  | WBT   | WBR  | NBL  | NBT  | NBR   | NEL2 | NEL   | NER  |
|------------------------|------|------|-------|------|------|------|-------|------|-------|------|
| Lane Configurations    | ↵    | ↑    | ↶     |      |      | ↕↕↕  |       |      | ↵↵    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0  | 4.0  | 4.0   |      |      | 4.0  |       |      | 4.0   |      |
| Lane Util. Factor      | 1.00 | 1.00 | 1.00  |      |      | 0.91 |       |      | 0.97  |      |
| Frt                    | 1.00 | 1.00 | 0.98  |      |      | 0.99 |       |      | 0.99  |      |
| Flt Protected          | 0.95 | 1.00 | 1.00  |      |      | 1.00 |       |      | 0.96  |      |
| Satd. Flow (prot)      | 1770 | 1863 | 1833  |      |      | 5001 |       |      | 3407  |      |
| Flt Permitted          | 0.48 | 1.00 | 1.00  |      |      | 1.00 |       |      | 0.96  |      |
| Satd. Flow (perm)      | 895  | 1863 | 1833  |      |      | 5001 |       |      | 3407  |      |
| Volume (vph)           | 56   | 138  | 196   | 26   | 36   | 321  | 31    | 227  | 916   | 125  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 56   | 138  | 196   | 26   | 36   | 321  | 31    | 227  | 916   | 125  |
| RTOR Reduction (vph)   | 0    | 0    | 7     | 0    | 0    | 14   | 0     | 0    | 0     | 0    |
| Lane Group Flow (vph)  | 56   | 138  | 215   | 0    | 0    | 374  | 0     | 0    | 1268  | 0    |
| Turn Type              | Perm |      |       | Perm |      |      | Split |      |       |      |
| Protected Phases       |      | 4    | 8     |      |      | 2    |       | 6    | 6     |      |
| Permitted Phases       | 4    |      |       | 2    |      |      |       |      |       |      |
| Actuated Green, G (s)  | 17.0 | 17.0 | 17.0  |      |      | 10.0 |       |      | 34.0  |      |
| Effective Green, g (s) | 16.0 | 16.0 | 16.0  |      |      | 9.0  |       |      | 33.0  |      |
| Actuated g/C Ratio     | 0.23 | 0.23 | 0.23  |      |      | 0.13 |       |      | 0.47  |      |
| Clearance Time (s)     | 3.0  | 3.0  | 3.0   |      |      | 3.0  |       |      | 3.0   |      |
| Lane Grp Cap (vph)     | 205  | 426  | 419   |      |      | 643  |       |      | 1606  |      |
| v/s Ratio Prot         |      | 0.07 | c0.12 |      |      |      |       |      | c0.37 |      |
| v/s Ratio Perm         | 0.06 |      |       |      |      | 0.07 |       |      |       |      |
| v/c Ratio              | 0.27 | 0.32 | 0.51  |      |      | 0.58 |       |      | 0.79  |      |
| Uniform Delay, d1      | 22.2 | 22.5 | 23.6  |      |      | 28.7 |       |      | 15.6  |      |
| Progression Factor     | 0.34 | 0.34 | 0.54  |      |      | 0.79 |       |      | 1.00  |      |
| Incremental Delay, d2  | 3.0  | 1.9  | 3.9   |      |      | 3.8  |       |      | 4.0   |      |
| Delay (s)              | 10.6 | 9.5  | 16.7  |      |      | 26.4 |       |      | 19.6  |      |
| Level of Service       | B    | A    | B     |      |      | C    |       |      | B     |      |
| Approach Delay (s)     |      | 9.8  | 16.7  |      |      | 26.4 |       |      | 19.6  |      |
| Approach LOS           |      | A    | B     |      |      | C    |       |      | B     |      |

**Intersection Summary**

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 19.7  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.68  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 72.7% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
5882: P Street & 30th Street

7/11/2005



| Movement               | WBT   | WBR  | NBL2 | NBL   | NBT  |
|------------------------|-------|------|------|-------|------|
| Lane Configurations    | ↑↑↑   |      |      | ↑     | ↑↑↑  |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0   |      |      | 4.0   | 4.0  |
| Lane Util. Factor      | 0.91  |      |      | 1.00  | 0.91 |
| Frt                    | 0.97  |      |      | 1.00  | 1.00 |
| Flt Protected          | 1.00  |      |      | 0.95  | 1.00 |
| Satd. Flow (prot)      | 4945  |      |      | 1593  | 4916 |
| Flt Permitted          | 1.00  |      |      | 0.95  | 1.00 |
| Satd. Flow (perm)      | 4945  |      |      | 1593  | 4916 |
| Volume (vph)           | 573   | 129  | 312  | 86    | 245  |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 573   | 129  | 312  | 86    | 245  |
| RTOR Reduction (vph)   | 0     | 0    | 0    | 78    | 0    |
| Lane Group Flow (vph)  | 702   | 0    | 0    | 321   | 245  |
| Parking (#/hr)         |       | 0    | 0    | 0     | 0    |
| Turn Type              |       |      | Perm | Perm  |      |
| Protected Phases       | 6     |      |      |       | 8    |
| Permitted Phases       |       |      | 8    | 8     |      |
| Actuated Green, G (s)  | 28.0  |      |      | 36.0  | 36.0 |
| Effective Green, g (s) | 27.0  |      |      | 35.0  | 35.0 |
| Actuated g/C Ratio     | 0.39  |      |      | 0.50  | 0.50 |
| Clearance Time (s)     | 3.0   |      |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)     | 1907  |      |      | 797   | 2458 |
| v/s Ratio Prot         | c0.14 |      |      |       | 0.05 |
| v/s Ratio Perm         |       |      |      | c0.20 |      |
| v/c Ratio              | 0.37  |      |      | 0.40  | 0.10 |
| Uniform Delay, d1      | 15.4  |      |      | 11.0  | 9.2  |
| Progression Factor     | 0.37  |      |      | 1.00  | 1.00 |
| Incremental Delay, d2  | 0.4   |      |      | 1.5   | 0.1  |
| Delay (s)              | 6.1   |      |      | 12.5  | 9.3  |
| Level of Service       | A     |      |      | B     | A    |
| Approach Delay (s)     | 6.1   |      |      |       | 11.3 |
| Approach LOS           | A     |      |      |       | B    |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 8.6   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.39  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 42.7% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
5886: Capitol & 30th Street

7/11/2005



| Movement               | EBL   | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|-------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    | ↖     | ↗    |      |      | ↖     | ↗    |      | ↖    | ↗    |      |      |      |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0   | 4.0  |      |      | 4.0   |      |      | 4.0  |      |      |      |      |
| Lane Util. Factor      | 1.00  | 0.95 |      |      | 0.95  |      |      | 0.91 |      |      |      |      |
| Fr't                   | 1.00  | 1.00 |      |      | 0.96  |      |      | 0.99 |      |      |      |      |
| Flt Protected          | 0.95  | 1.00 |      |      | 1.00  |      |      | 0.99 |      |      |      |      |
| Satd. Flow (prot)      | 1770  | 3539 |      |      | 3396  |      |      | 4994 |      |      |      |      |
| Flt Permitted          | 0.95  | 1.00 |      |      | 1.00  |      |      | 0.99 |      |      |      |      |
| Satd. Flow (perm)      | 1770  | 3539 |      |      | 3396  |      |      | 4994 |      |      |      |      |
| Volume (vph)           | 125   | 234  | 0    | 0    | 472   | 174  | 139  | 1095 | 116  | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 125   | 234  | 0    | 0    | 472   | 174  | 139  | 1095 | 116  | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0     | 0    | 0    | 0    | 54    | 0    | 0    | 16   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 125   | 234  | 0    | 0    | 592   | 0    | 0    | 1334 | 0    | 0    | 0    | 0    |
| Turn Type              | Prot  |      |      |      |       |      | Perm |      |      |      |      |      |
| Protected Phases       | 7     | 4    |      |      | 8     |      |      | 2    |      |      |      |      |
| Permitted Phases       |       |      |      |      |       |      | 2    |      |      |      |      |      |
| Actuated Green, G (s)  | 12.0  | 36.0 |      |      | 21.0  |      |      | 28.0 |      |      |      |      |
| Effective Green, g (s) | 11.0  | 35.0 |      |      | 20.0  |      |      | 27.0 |      |      |      |      |
| Actuated g/C Ratio     | 0.16  | 0.50 |      |      | 0.29  |      |      | 0.39 |      |      |      |      |
| Clearance Time (s)     | 3.0   | 3.0  |      |      | 3.0   |      |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)     | 278   | 1770 |      |      | 970   |      |      | 1926 |      |      |      |      |
| v/s Ratio Prot         | c0.07 | 0.07 |      |      | c0.17 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |       |      |      |      |       |      |      | 0.27 |      |      |      |      |
| v/c Ratio              | 0.45  | 0.13 |      |      | 0.61  |      |      | 0.69 |      |      |      |      |
| Uniform Delay, d1      | 26.8  | 9.4  |      |      | 21.6  |      |      | 18.0 |      |      |      |      |
| Progression Factor     | 0.90  | 0.80 |      |      | 0.19  |      |      | 0.59 |      |      |      |      |
| Incremental Delay, d2  | 5.0   | 0.2  |      |      | 2.0   |      |      | 1.5  |      |      |      |      |
| Delay (s)              | 29.0  | 7.7  |      |      | 6.0   |      |      | 12.1 |      |      |      |      |
| Level of Service       | C     | A    |      |      | A     |      |      | B    |      |      |      |      |
| Approach Delay (s)     |       | 15.1 |      |      | 6.0   |      |      | 12.1 |      |      | 0.0  |      |
| Approach LOS           |       | B    |      |      | A     |      |      | B    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 10.9  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.62  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 62.1% | ICU Level of Service | B    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 5888: Capitol & 29th Street

7/11/2005



| Movement                          | EBL  | EBT  | EBR   | WBL   | WBT  | WBR                  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|-------|-------|------|----------------------|------|------|------|------|------|------|
| Lane Configurations               |      | ↑↑   |       | ↖     | ↑↑   |                      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900  | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0  |       | 4.0   | 4.0  |                      |      |      |      |      | 4.0  |      |
| Lane Util. Factor                 |      | 0.95 |       | 1.00  | 0.95 |                      |      |      |      |      | 0.91 |      |
| Frnt                              |      | 0.95 |       | 1.00  | 1.00 |                      |      |      |      |      | 0.98 |      |
| Flt Protected                     |      | 1.00 |       | 0.95  | 1.00 |                      |      |      |      |      | 0.99 |      |
| Satd. Flow (prot)                 |      | 3202 |       | 1770  | 3539 |                      |      |      |      |      | 4799 |      |
| Flt Permitted                     |      | 1.00 |       | 0.56  | 1.00 |                      |      |      |      |      | 0.99 |      |
| Satd. Flow (perm)                 |      | 3202 |       | 1045  | 3539 |                      |      |      |      |      | 4799 |      |
| Volume (vph)                      | 0    | 214  | 100   | 162   | 482  | 0                    | 0    | 0    | 0    | 147  | 645  | 92   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 214  | 100   | 162   | 482  | 0                    | 0    | 0    | 0    | 147  | 645  | 92   |
| RTOR Reduction (vph)              | 0    | 53   | 0     | 0     | 0    | 0                    | 0    | 0    | 0    | 0    | 21   | 0    |
| Lane Group Flow (vph)             | 0    | 261  | 0     | 162   | 482  | 0                    | 0    | 0    | 0    | 0    | 864  | 0    |
| Parking (#/hr)                    |      | 0    | 0     |       |      |                      |      |      |      |      | 0    | 0    |
| Turn Type                         |      |      |       | Perm  |      |                      |      |      |      |      | Perm |      |
| Protected Phases                  |      | 4    |       |       | 8    |                      |      |      |      |      |      | 6    |
| Permitted Phases                  |      |      |       | 8     |      |                      |      |      |      | 6    |      |      |
| Actuated Green, G (s)             |      | 34.0 |       | 34.0  | 34.0 |                      |      |      |      |      | 30.0 |      |
| Effective Green, g (s)            |      | 33.0 |       | 33.0  | 33.0 |                      |      |      |      |      | 29.0 |      |
| Actuated g/C Ratio                |      | 0.47 |       | 0.47  | 0.47 |                      |      |      |      |      | 0.41 |      |
| Clearance Time (s)                |      | 3.0  |       | 3.0   | 3.0  |                      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |      | 1510 |       | 493   | 1668 |                      |      |      |      |      | 1988 |      |
| v/s Ratio Prot                    |      | 0.08 |       |       | 0.14 |                      |      |      |      |      |      |      |
| v/s Ratio Perm                    |      |      |       | c0.15 |      |                      |      |      |      |      | 0.18 |      |
| v/c Ratio                         |      | 0.17 |       | 0.33  | 0.29 |                      |      |      |      |      | 0.43 |      |
| Uniform Delay, d1                 |      | 10.6 |       | 11.6  | 11.3 |                      |      |      |      |      | 14.6 |      |
| Progression Factor                |      | 0.55 |       | 0.44  | 0.46 |                      |      |      |      |      | 0.28 |      |
| Incremental Delay, d2             |      | 0.2  |       | 1.4   | 0.3  |                      |      |      |      |      | 0.7  |      |
| Delay (s)                         |      | 6.1  |       | 6.5   | 5.6  |                      |      |      |      |      | 4.8  |      |
| Level of Service                  |      | A    |       | A     | A    |                      |      |      |      |      | A    |      |
| Approach Delay (s)                |      | 6.1  |       |       | 5.8  |                      |      | 0.0  |      |      | 4.8  |      |
| Approach LOS                      |      | A    |       |       | A    |                      |      | A    |      |      | A    |      |
| <b>Intersection Summary</b>       |      |      |       |       |      |                      |      |      |      |      |      |      |
| HCM Average Control Delay         |      |      | 5.4   |       |      | HCM Level of Service |      |      |      |      | A    |      |
| HCM Volume to Capacity ratio      |      |      | 0.38  |       |      |                      |      |      |      |      |      |      |
| Actuated Cycle Length (s)         |      |      | 70.0  |       |      | Sum of lost time (s) |      |      |      |      | 8.0  |      |
| Intersection Capacity Utilization |      |      | 62.1% |       |      | ICU Level of Service |      |      |      |      | B    |      |
| Analysis Period (min)             |      |      | 15    |       |      |                      |      |      |      |      |      |      |
| c Critical Lane Group             |      |      |       |       |      |                      |      |      |      |      |      |      |

HCM Signalized Intersection Capacity Analysis

5890: Capitol & 26th St

7/11/2005



| Movement                          | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|------|------|-------|------|------|-------|------|------|------|------|
| Lane Configurations               |      |      |      |      |       |      |      |       |      |      |      |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               | 4.0  | 4.0  |      | 4.0  | 4.0   |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor                 | 1.00 | 1.00 |      | 1.00 | 1.00  |      |      | 1.00  |      |      | 1.00 |      |
| Fr <sub>t</sub>                   | 1.00 | 1.00 |      | 1.00 | 0.99  |      |      | 0.97  |      |      | 0.99 |      |
| Fl <sub>t</sub> Protected         | 0.95 | 1.00 |      | 0.95 | 1.00  |      |      | 0.99  |      |      | 0.98 |      |
| Satd. Flow (prot)                 | 1770 | 1669 |      | 1770 | 1664  |      |      | 1609  |      |      | 1624 |      |
| Fl <sub>t</sub> Permitted         | 0.42 | 1.00 |      | 0.63 | 1.00  |      |      | 0.97  |      |      | 0.92 |      |
| Satd. Flow (perm)                 | 779  | 1669 |      | 1168 | 1664  |      |      | 1578  |      |      | 1519 |      |
| Volume (vph)                      | 11   | 203  | 6    | 9    | 425   | 22   | 10   | 37    | 15   | 18   | 20   | 3    |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 11   | 203  | 6    | 9    | 425   | 22   | 10   | 37    | 15   | 18   | 20   | 3    |
| RTOR Reduction (vph)              | 0    | 2    | 0    | 0    | 4     | 0    | 0    | 10    | 0    | 0    | 2    | 0    |
| Lane Group Flow (vph)             | 11   | 207  | 0    | 9    | 444   | 0    | 0    | 52    | 0    | 0    | 39   | 0    |
| Parking (#/hr)                    |      | 0    | 0    |      | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type                         | Perm |      |      | Perm |       |      | Perm |       |      | Perm |      |      |
| Protected Phases                  |      | 4    |      |      | 8     |      |      | 2     |      |      | 6    |      |
| Permitted Phases                  | 4    |      |      | 8    |       |      | 2    |       |      | 6    |      |      |
| Actuated Green, G (s)             | 26.0 | 26.0 |      | 26.0 | 26.0  |      |      | 18.0  |      |      | 18.0 |      |
| Effective Green, g (s)            | 25.0 | 25.0 |      | 25.0 | 25.0  |      |      | 17.0  |      |      | 17.0 |      |
| Actuated g/C Ratio                | 0.50 | 0.50 |      | 0.50 | 0.50  |      |      | 0.34  |      |      | 0.34 |      |
| Clearance Time (s)                | 3.0  | 3.0  |      | 3.0  | 3.0   |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)                | 390  | 835  |      | 584  | 832   |      |      | 537   |      |      | 516  |      |
| v/s Ratio Prot                    |      | 0.12 |      |      | c0.27 |      |      |       |      |      |      |      |
| v/s Ratio Perm                    | 0.01 |      |      | 0.01 |       |      |      | c0.03 |      |      | 0.03 |      |
| v/c Ratio                         | 0.03 | 0.25 |      | 0.02 | 0.53  |      |      | 0.10  |      |      | 0.08 |      |
| Uniform Delay, d <sub>1</sub>     | 6.3  | 7.1  |      | 6.3  | 8.5   |      |      | 11.3  |      |      | 11.2 |      |
| Progression Factor                | 1.00 | 1.00 |      | 1.00 | 1.00  |      |      | 1.00  |      |      | 0.73 |      |
| Incremental Delay, d <sub>2</sub> | 0.1  | 0.7  |      | 0.0  | 2.4   |      |      | 0.4   |      |      | 0.3  |      |
| Delay (s)                         | 6.5  | 7.8  |      | 6.3  | 11.0  |      |      | 11.6  |      |      | 8.5  |      |
| Level of Service                  | A    | A    |      | A    | B     |      |      | B     |      |      | A    |      |
| Approach Delay (s)                |      | 7.8  |      |      | 10.9  |      |      | 11.6  |      |      | 8.5  |      |
| Approach LOS                      |      | A    |      |      | B     |      |      | B     |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 9.9   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.36  |                      |     |
| Actuated Cycle Length (s)         | 50.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 35.3% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
6481: J Street & 28th Street

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL   | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|-------|------|------|------|------|------|
| Lane Configurations    |      | ↑↑↑  |      |      |      |      |       | ↑    |      |      | ↑    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      |      |      |      |       | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor      |      | 0.91 |      |      |      |      |       | 1.00 |      |      | 1.00 |      |
| Frt                    |      | 1.00 |      |      |      |      |       | 0.92 |      |      | 1.00 |      |
| Flt Protected          |      | 1.00 |      |      |      |      |       | 1.00 |      |      | 0.98 |      |
| Satd. Flow (prot)      |      | 4885 |      |      |      |      |       | 1550 |      |      | 1646 |      |
| Flt Permitted          |      | 1.00 |      |      |      |      |       | 1.00 |      |      | 0.91 |      |
| Satd. Flow (perm)      |      | 4885 |      |      |      |      |       | 1550 |      |      | 1526 |      |
| Volume (vph)           | 33   | 846  | 27   | 0    | 0    | 0    | 0     | 72   | 92   | 19   | 33   | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 33   | 846  | 27   | 0    | 0    | 0    | 0     | 72   | 92   | 19   | 33   | 0    |
| RTOR Reduction (vph)   | 0    | 4    | 0    | 0    | 0    | 0    | 0     | 48   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 902  | 0    | 0    | 0    | 0    | 0     | 116  | 0    | 0    | 52   | 0    |
| Parking (#/hr)         | 0    | 0    | 0    |      |      |      |       | 0    | 0    | 0    | 0    |      |
| Turn Type              | Perm |      |      |      |      |      | Perm  |      |      |      |      |      |
| Protected Phases       |      | 4    |      |      |      |      | 2     |      |      |      | 6    |      |
| Permitted Phases       | 4    |      |      |      |      |      |       |      | 6    |      |      |      |
| Actuated Green, G (s)  |      | 32.0 |      |      |      |      | 32.0  |      |      |      | 32.0 |      |
| Effective Green, g (s) |      | 31.0 |      |      |      |      | 31.0  |      |      |      | 31.0 |      |
| Actuated g/C Ratio     |      | 0.44 |      |      |      |      | 0.44  |      |      |      | 0.44 |      |
| Clearance Time (s)     |      | 3.0  |      |      |      |      | 3.0   |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 2163 |      |      |      |      | 686   |      |      |      | 676  |      |
| v/s Ratio Prot         |      |      |      |      |      |      | c0.07 |      |      |      |      |      |
| v/s Ratio Perm         |      | 0.18 |      |      |      |      |       |      |      |      | 0.03 |      |
| v/c Ratio              |      | 0.42 |      |      |      |      | 0.17  |      |      |      | 0.08 |      |
| Uniform Delay, d1      |      | 13.3 |      |      |      |      | 11.7  |      |      |      | 11.2 |      |
| Progression Factor     |      | 1.00 |      |      |      |      | 0.57  |      |      |      | 1.00 |      |
| Incremental Delay, d2  |      | 0.6  |      |      |      |      | 0.5   |      |      |      | 0.2  |      |
| Delay (s)              |      | 13.9 |      |      |      |      | 7.2   |      |      |      | 11.5 |      |
| Level of Service       |      | B    |      |      |      |      | A     |      |      |      | B    |      |
| Approach Delay (s)     |      | 13.9 |      |      |      | 0.0  | 7.2   |      |      |      | 11.5 |      |
| Approach LOS           |      | B    |      |      |      | A    | A     |      |      |      | B    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 12.8  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.29  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 40.4% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
6482: K Street & 28th Street

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↕    | ↗    |      | ↕    | ↗    |      | ↕    | ↗    |      | ↕    | ↗    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  |      | 4.0  | 4.0  |      | 4.0  | 4.0  |      | 4.0  | 4.0  |
| Lane Util. Factor      |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |
| Frt                    |      | 1.00 | 0.85 |      | 1.00 | 0.85 |      | 1.00 | 0.85 |      | 1.00 | 0.85 |
| Flt Protected          |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 0.99 | 1.00 |      | 0.99 | 1.00 |
| Satd. Flow (prot)      |      | 1672 | 1425 |      | 1674 | 1425 |      | 1666 | 1425 |      | 1664 | 1425 |
| Flt Permitted          |      | 0.98 | 1.00 |      | 0.99 | 1.00 |      | 0.97 | 1.00 |      | 0.97 | 1.00 |
| Satd. Flow (perm)      |      | 1642 | 1425 |      | 1667 | 1425 |      | 1628 | 1425 |      | 1620 | 1425 |
| Volume (vph)           | 7    | 128  | 15   | 14   | 557  | 78   | 15   | 103  | 65   | 11   | 64   | 8    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 7    | 128  | 15   | 14   | 557  | 78   | 15   | 103  | 65   | 11   | 64   | 8    |
| RTOR Reduction (vph)   | 0    | 0    | 6    | 0    | 0    | 24   | 0    | 0    | 46   | 0    | 0    | 6    |
| Lane Group Flow (vph)  | 0    | 135  | 9    | 0    | 571  | 54   | 0    | 118  | 19   | 0    | 75   | 2    |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      | Perm | Perm |      | Perm | Perm |      | Perm | Perm |      | Perm |
| Protected Phases       |      | 4    |      |      | 8    |      |      | 2    |      |      | 6    |      |
| Permitted Phases       | 4    |      | 4    | 8    |      | 8    | 2    |      | 2    | 6    |      | 6    |
| Actuated Green, G (s)  |      | 43.0 | 43.0 |      | 43.0 | 43.0 |      | 21.0 | 21.0 |      | 21.0 | 21.0 |
| Effective Green, g (s) |      | 42.0 | 42.0 |      | 42.0 | 42.0 |      | 20.0 | 20.0 |      | 20.0 | 20.0 |
| Actuated g/C Ratio     |      | 0.60 | 0.60 |      | 0.60 | 0.60 |      | 0.29 | 0.29 |      | 0.29 | 0.29 |
| Clearance Time (s)     |      | 3.0  | 3.0  |      | 3.0  | 3.0  |      | 3.0  | 3.0  |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |      | 985  | 855  |      | 1000 | 855  |      | 465  | 407  |      | 463  | 407  |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      | 0.08 | 0.01 |      | 0.34 | 0.04 |      | 0.07 | 0.01 |      | 0.05 | 0.00 |
| v/c Ratio              |      | 0.14 | 0.01 |      | 0.57 | 0.06 |      | 0.25 | 0.05 |      | 0.16 | 0.01 |
| Uniform Delay, d1      |      | 6.1  | 5.6  |      | 8.5  | 5.8  |      | 19.3 | 18.1 |      | 18.7 | 17.9 |
| Progression Factor     |      | 1.00 | 1.00 |      | 0.87 | 1.05 |      | 0.73 | 1.08 |      | 0.77 | 0.68 |
| Incremental Delay, d2  |      | 0.3  | 0.0  |      | 2.0  | 0.1  |      | 1.3  | 0.2  |      | 0.7  | 0.0  |
| Delay (s)              |      | 6.4  | 5.7  |      | 9.4  | 6.3  |      | 15.4 | 19.8 |      | 15.2 | 12.2 |
| Level of Service       |      | A    | A    |      | A    | A    |      | B    | B    |      | B    | B    |
| Approach Delay (s)     |      | 6.3  |      |      | 9.1  |      |      | 17.0 |      |      | 14.9 |      |
| Approach LOS           |      | A    |      |      | A    |      |      | B    |      |      | B    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.5  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.47  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 60.1% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

# HCM Signalized Intersection Capacity Analysis

6483: L Street & 28th Street

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      |      | ↕↕   |      |      | ↕    |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      |      | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor      |      |      |      |      | 0.95 |      |      | 1.00 |      |      | 1.00 |      |
| Frt                    |      |      |      |      | 0.99 |      |      | 1.00 |      |      | 0.97 |      |
| Flt Protected          |      |      |      |      | 1.00 |      |      | 0.99 |      |      | 1.00 |      |
| Satd. Flow (prot)      |      |      |      |      | 3331 |      |      | 1655 |      |      | 1629 |      |
| Flt Permitted          |      |      |      |      | 1.00 |      |      | 0.92 |      |      | 1.00 |      |
| Satd. Flow (perm)      |      |      |      |      | 3331 |      |      | 1540 |      |      | 1629 |      |
| Volume (vph)           | 0    | 0    | 0    | 18   | 658  | 38   | 43   | 121  | 0    | 0    | 76   | 20   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 18   | 658  | 38   | 43   | 121  | 0    | 0    | 76   | 20   |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 6    | 0    | 0    | 0    | 0    | 0    | 13   | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 708  | 0    | 0    | 164  | 0    | 0    | 83   | 0    |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Turn Type              |      |      |      |      | Perm |      |      | Perm |      |      |      |      |
| Protected Phases       |      |      |      |      |      | 6    |      | 8    |      |      | 4    |      |
| Permitted Phases       |      |      |      |      | 6    |      | 8    |      |      |      |      |      |
| Actuated Green, G (s)  |      |      |      |      | 37.0 |      |      | 27.0 |      |      | 27.0 |      |
| Effective Green, g (s) |      |      |      |      | 36.0 |      |      | 26.0 |      |      | 26.0 |      |
| Actuated g/C Ratio     |      |      |      |      | 0.51 |      |      | 0.37 |      |      | 0.37 |      |
| Clearance Time (s)     |      |      |      |      | 3.0  |      |      | 3.0  |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      |      |      |      | 1713 |      |      | 572  |      |      | 605  |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      | 0.05 |      |
| v/s Ratio Perm         |      |      |      |      | 0.21 |      |      | 0.11 |      |      |      |      |
| v/c Ratio              |      |      |      |      | 0.41 |      |      | 0.29 |      |      | 0.14 |      |
| Uniform Delay, d1      |      |      |      |      | 10.5 |      |      | 15.5 |      |      | 14.6 |      |
| Progression Factor     |      |      |      |      | 0.49 |      |      | 0.40 |      |      | 1.42 |      |
| Incremental Delay, d2  |      |      |      |      | 0.7  |      |      | 1.2  |      |      | 0.5  |      |
| Delay (s)              |      |      |      |      | 5.8  |      |      | 7.3  |      |      | 21.2 |      |
| Level of Service       |      |      |      |      | A    |      |      | A    |      |      | C    |      |
| Approach Delay (s)     |      | 0.0  |      |      | 5.8  |      |      | 7.3  |      |      | 21.2 |      |
| Approach LOS           |      | A    |      |      | A    |      |      | A    |      |      | C    |      |

## Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 7.6   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.36  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 42.0% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6484: Capitol & 28th Street

7/11/2005



| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|---------------------------|------|------|------|------|-------|------|------|-------|------|------|------|------|
| Lane Configurations       |      | ↕    |      | ↖    | ↗     |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |      | 4.0  |      | 4.0  | 4.0   |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor         |      | 1.00 |      | 1.00 | 1.00  |      |      | 1.00  |      |      | 1.00 |      |
| Fr <sub>t</sub>           |      | 1.00 |      | 1.00 | 0.99  |      |      | 0.98  |      |      | 0.98 |      |
| Fl <sub>t</sub> Protected |      | 1.00 |      | 0.95 | 1.00  |      |      | 0.99  |      |      | 0.98 |      |
| Satd. Flow (prot)         |      | 1666 |      | 1770 | 1653  |      |      | 1627  |      |      | 1616 |      |
| Fl <sub>t</sub> Permitted |      | 0.97 |      | 0.60 | 1.00  |      |      | 0.97  |      |      | 0.87 |      |
| Satd. Flow (perm)         |      | 1617 |      | 1124 | 1653  |      |      | 1583  |      |      | 1439 |      |
| Volume (vph)              | 16   | 244  | 7    | 12   | 485   | 50   | 22   | 124   | 31   | 31   | 40   | 11   |
| Peak-hour factor, PHF     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 16   | 244  | 7    | 12   | 485   | 50   | 22   | 124   | 31   | 31   | 40   | 11   |
| RTOR Reduction (vph)      | 0    | 1    | 0    | 0    | 5     | 0    | 0    | 11    | 0    | 0    | 8    | 0    |
| Lane Group Flow (vph)     | 0    | 266  | 0    | 12   | 530   | 0    | 0    | 166   | 0    | 0    | 74   | 0    |
| Parking (#/hr)            | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type                 | Perm |      |      | Perm |       |      | Perm |       |      | Perm |      |      |
| Protected Phases          |      | 4    |      |      | 8     |      |      | 2     |      |      | 6    |      |
| Permitted Phases          | 4    |      |      | 8    |       |      | 2    |       |      | 6    |      |      |
| Actuated Green, G (s)     |      | 42.0 |      | 42.0 | 42.0  |      |      | 22.0  |      |      | 22.0 |      |
| Effective Green, g (s)    |      | 41.0 |      | 41.0 | 41.0  |      |      | 21.0  |      |      | 21.0 |      |
| Actuated g/C Ratio        |      | 0.59 |      | 0.59 | 0.59  |      |      | 0.30  |      |      | 0.30 |      |
| Clearance Time (s)        |      | 3.0  |      | 3.0  | 3.0   |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)        |      | 947  |      | 658  | 968   |      |      | 475   |      |      | 432  |      |
| v/s Ratio Prot            |      |      |      |      | c0.32 |      |      |       |      |      |      |      |
| v/s Ratio Perm            |      | 0.16 |      | 0.01 |       |      |      | c0.10 |      |      | 0.05 |      |
| v/c Ratio                 |      | 0.28 |      | 0.02 | 0.55  |      |      | 0.35  |      |      | 0.17 |      |
| Uniform Delay, d1         |      | 7.2  |      | 6.1  | 8.8   |      |      | 19.2  |      |      | 18.1 |      |
| Progression Factor        |      | 1.00 |      | 0.24 | 0.41  |      |      | 0.69  |      |      | 0.33 |      |
| Incremental Delay, d2     |      | 0.7  |      | 0.0  | 2.1   |      |      | 2.0   |      |      | 0.9  |      |
| Delay (s)                 |      | 7.9  |      | 1.5  | 5.8   |      |      | 15.3  |      |      | 6.8  |      |
| Level of Service          |      | A    |      | A    | A     |      |      | B     |      |      | A    |      |
| Approach Delay (s)        |      | 7.9  |      |      | 5.7   |      |      | 15.3  |      |      | 6.8  |      |
| Approach LOS              |      | A    |      |      | A     |      |      | B     |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 7.9   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.48  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 45.6% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6485: N Street & 28th Street

7/11/2005



| Movement                  | EBL   | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------------|-------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations       |       | ↔    |      |      | ↔     |      |      | ↔    |      |      | ↔    |      |
| Ideal Flow (vphpl)        | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |       | 4.0  |      |      | 4.0   |      |      | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor         |       | 0.95 |      |      | 1.00  |      |      | 1.00 |      |      | 1.00 |      |
| Fr <sub>t</sub>           |       | 1.00 |      |      | 0.91  |      |      | 0.95 |      |      | 1.00 |      |
| Fl <sub>t</sub> Protected |       | 0.99 |      |      | 0.98  |      |      | 1.00 |      |      | 0.99 |      |
| Satd. Flow (prot)         |       | 3331 |      |      | 1498  |      |      | 1594 |      |      | 1652 |      |
| Fl <sub>t</sub> Permitted |       | 0.91 |      |      | 0.85  |      |      | 1.00 |      |      | 0.93 |      |
| Satd. Flow (perm)         |       | 3049 |      |      | 1295  |      |      | 1594 |      |      | 1561 |      |
| Volume (vph)              | 45    | 286  | 6    | 38   | 0     | 82   | 0    | 84   | 48   | 18   | 42   | 0    |
| Peak-hour factor, PHF     | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 45    | 286  | 6    | 38   | 0     | 82   | 0    | 84   | 48   | 18   | 42   | 0    |
| RTOR Reduction (vph)      | 0     | 2    | 0    | 0    | 47    | 0    | 0    | 26   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)     | 0     | 335  | 0    | 0    | 73    | 0    | 0    | 106  | 0    | 0    | 60   | 0    |
| Parking (#/hr)            | 0     | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Turn Type                 | Perm  |      | Perm |      | Perm  |      | Perm |      | Perm |      | Perm |      |
| Protected Phases          | 2     |      | 6    |      | 8     |      | 4    |      |      |      |      |      |
| Permitted Phases          | 2     |      | 6    |      | 4     |      |      |      |      |      |      |      |
| Actuated Green, G (s)     | 31.0  |      | 31.0 |      | 33.0  |      | 33.0 |      |      |      |      |      |
| Effective Green, g (s)    | 30.0  |      | 30.0 |      | 32.0  |      | 32.0 |      |      |      |      |      |
| Actuated g/C Ratio        | 0.43  |      | 0.43 |      | 0.46  |      | 0.46 |      |      |      |      |      |
| Clearance Time (s)        | 3.0   |      | 3.0  |      | 3.0   |      | 3.0  |      |      |      |      |      |
| Lane Grp Cap (vph)        | 1307  |      | 555  |      | 729   |      | 714  |      |      |      |      |      |
| v/s Ratio Prot            |       |      |      |      | c0.07 |      |      |      |      |      |      |      |
| v/s Ratio Perm            | c0.11 |      | 0.06 |      |       |      | 0.04 |      |      |      |      |      |
| v/c Ratio                 | 0.26  |      | 0.13 |      | 0.15  |      | 0.08 |      |      |      |      |      |
| Uniform Delay, d1         | 12.8  |      | 12.1 |      | 11.0  |      | 10.7 |      |      |      |      |      |
| Progression Factor        | 1.00  |      | 3.75 |      | 1.00  |      | 0.97 |      |      |      |      |      |
| Incremental Delay, d2     | 0.5   |      | 0.5  |      | 0.4   |      | 0.2  |      |      |      |      |      |
| Delay (s)                 | 13.3  |      | 45.9 |      | 11.5  |      | 10.6 |      |      |      |      |      |
| Level of Service          | B     |      | D    |      | B     |      | B    |      |      |      |      |      |
| Approach Delay (s)        | 13.3  |      | 45.9 |      | 11.5  |      | 10.6 |      |      |      |      |      |
| Approach LOS              | B     |      | D    |      | B     |      | B    |      |      |      |      |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 18.7  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.20  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 40.6% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



# HCM Signalized Intersection Capacity Analysis

6511: K Street & Alhambra

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↕    | ↗    |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  |      | 4.0  |      |      | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00 | 1.00 |      | 1.00 |      |      | 0.95 |      |      | 0.95 |      |
| Frt                    |      | 1.00 | 0.85 |      | 0.99 |      |      | 0.99 |      |      | 0.95 |      |
| Flt Protected          |      | 0.97 | 1.00 |      | 0.99 |      |      | 0.99 |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 1812 | 1583 |      | 1822 |      |      | 3452 |      |      | 3373 |      |
| Flt Permitted          |      | 0.85 | 1.00 |      | 0.93 |      |      | 0.58 |      |      | 0.95 |      |
| Satd. Flow (perm)      |      | 1576 | 1583 |      | 1723 |      |      | 2026 |      |      | 3219 |      |
| Volume (vph)           | 44   | 35   | 84   | 25   | 61   | 6    | 131  | 310  | 36   | 3    | 727  | 331  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 44   | 35   | 84   | 25   | 61   | 6    | 131  | 310  | 36   | 3    | 727  | 331  |
| RTOR Reduction (vph)   | 0    | 0    | 55   | 0    | 3    | 0    | 0    | 9    | 0    | 0    | 75   | 0    |
| Lane Group Flow (vph)  | 0    | 79   | 29   | 0    | 89   | 0    | 0    | 468  | 0    | 0    | 986  | 0    |
| Turn Type              | Perm |      | Perm | Perm |      |      | Perm |      |      | Perm |      |      |
| Protected Phases       |      | 4    |      |      | 8    |      |      | 2    |      |      |      | 6    |
| Permitted Phases       | 4    |      | 4    | 8    |      |      | 2    |      |      | 6    |      |      |
| Actuated Green, G (s)  |      | 25.0 | 25.0 |      | 25.0 |      |      | 39.0 |      |      | 39.0 |      |
| Effective Green, g (s) |      | 24.0 | 24.0 |      | 24.0 |      |      | 38.0 |      |      | 38.0 |      |
| Actuated g/C Ratio     |      | 0.34 | 0.34 |      | 0.34 |      |      | 0.54 |      |      | 0.54 |      |
| Clearance Time (s)     |      | 3.0  | 3.0  |      | 3.0  |      |      | 3.0  |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 540  | 543  |      | 591  |      |      | 1100 |      |      | 1747 |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      | 0.05 | 0.02 |      | 0.05 |      |      | 0.23 |      |      | 0.31 |      |
| v/c Ratio              |      | 0.15 | 0.05 |      | 0.15 |      |      | 0.43 |      |      | 0.56 |      |
| Uniform Delay, d1      |      | 15.9 | 15.4 |      | 15.9 |      |      | 9.5  |      |      | 10.5 |      |
| Progression Factor     |      | 1.13 | 2.17 |      | 1.00 |      |      | 0.41 |      |      | 0.47 |      |
| Incremental Delay, d2  |      | 0.6  | 0.2  |      | 0.5  |      |      | 1.0  |      |      | 1.0  |      |
| Delay (s)              |      | 18.6 | 33.6 |      | 16.5 |      |      | 5.0  |      |      | 6.0  |      |
| Level of Service       |      | B    | C    |      | B    |      |      | A    |      |      | A    |      |
| Approach Delay (s)     |      | 26.3 |      |      | 16.5 |      |      | 5.0  |      |      | 6.0  |      |
| Approach LOS           |      | C    |      |      | B    |      |      | A    |      |      | A    |      |

### Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 8.1   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.40  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 65.9% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 9622: K Street & 30th Street

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    | ↖    | ↗    |      |      | ↖     | ↗    |      | ↖↗↘  |      |      |      |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0  | 4.0  |      |      | 4.0   | 4.0  |      | 4.0  |      |      |      |      |
| Lane Util. Factor      | 1.00 | 1.00 |      |      | 1.00  | 1.00 |      | 0.91 |      |      |      |      |
| Fr't                   | 1.00 | 1.00 |      |      | 1.00  | 0.85 |      | 0.99 |      |      |      |      |
| Flt Protected          | 0.95 | 1.00 |      |      | 1.00  | 1.00 |      | 0.98 |      |      |      |      |
| Satd. Flow (prot)      | 1770 | 1863 |      |      | 1863  | 1583 |      | 4945 |      |      |      |      |
| Flt Permitted          | 0.44 | 1.00 |      |      | 1.00  | 1.00 |      | 0.98 |      |      |      |      |
| Satd. Flow (perm)      | 822  | 1863 |      |      | 1863  | 1583 |      | 4945 |      |      |      |      |
| Volume (vph)           | 47   | 144  | 0    | 0    | 394   | 77   | 292  | 552  | 74   | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 47   | 144  | 0    | 0    | 394   | 77   | 292  | 552  | 74   | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 0     | 39   | 0    | 15   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 47   | 144  | 0    | 0    | 394   | 39   | 0    | 903  | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      |      | Perm |       |      | Perm |      |      |      |      |      |
| Protected Phases       | 4    |      |      | 8    |       |      | 2    |      |      |      |      |      |
| Permitted Phases       | 4    |      |      | 8    |       |      | 2    |      |      |      |      |      |
| Actuated Green, G (s)  | 36.0 | 36.0 |      |      | 36.0  | 36.0 |      | 28.0 |      |      |      |      |
| Effective Green, g (s) | 35.0 | 35.0 |      |      | 35.0  | 35.0 |      | 27.0 |      |      |      |      |
| Actuated g/C Ratio     | 0.50 | 0.50 |      |      | 0.50  | 0.50 |      | 0.39 |      |      |      |      |
| Clearance Time (s)     | 3.0  | 3.0  |      |      | 3.0   | 3.0  |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)     | 411  | 932  |      |      | 932   | 792  |      | 1907 |      |      |      |      |
| v/s Ratio Prot         |      | 0.08 |      |      | c0.21 |      |      |      |      |      |      |      |
| v/s Ratio Perm         | 0.06 |      |      |      |       | 0.02 |      | 0.18 |      |      |      |      |
| v/c Ratio              | 0.11 | 0.15 |      |      | 0.42  | 0.05 |      | 0.47 |      |      |      |      |
| Uniform Delay, d1      | 9.3  | 9.5  |      |      | 11.1  | 9.0  |      | 16.2 |      |      |      |      |
| Progression Factor     | 1.01 | 0.96 |      |      | 0.71  | 0.64 |      | 0.37 |      |      |      |      |
| Incremental Delay, d2  | 0.5  | 0.3  |      |      | 1.2   | 0.1  |      | 0.8  |      |      |      |      |
| Delay (s)              | 9.9  | 9.5  |      |      | 9.1   | 5.9  |      | 6.7  |      |      |      |      |
| Level of Service       | A    | A    |      |      | A     | A    |      | A    |      |      |      |      |
| Approach Delay (s)     |      | 9.6  |      |      | 8.6   |      |      | 6.7  |      |      | 0.0  |      |
| Approach LOS           |      | A    |      |      | A     |      |      | A    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 7.6   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.45  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 55.4% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

EXISTING NO PROJECT WITH SMART PLAN

PM Peak Hour

Signalized Intersections

(pm1)



HCM Signalized Intersection Capacity Analysis  
 2004: L Street & 21th Street

7/11/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT   | WBR  | NBL  | NBT                  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|-------|------|-------|------|------|----------------------|------|------|------|------|
| Lane Configurations               |      |      |       |      | ↑↓    |      |      | ↑↑↑                  |      |      |      |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      |      |       |      | 4.0   |      |      | 4.0                  |      |      |      |      |
| Lane Util. Factor                 |      |      |       |      | 0.95  |      |      | 0.91                 |      |      |      |      |
| Fr <sub>t</sub>                   |      |      |       |      | 0.98  |      |      | 1.00                 |      |      |      |      |
| Fl <sub>t</sub> Protected         |      |      |       |      | 1.00  |      |      | 0.99                 |      |      |      |      |
| Satd. Flow (prot)                 |      |      |       |      | 3304  |      |      | 4889                 |      |      |      |      |
| Fl <sub>t</sub> Permitted         |      |      |       |      | 1.00  |      |      | 0.99                 |      |      |      |      |
| Satd. Flow (perm)                 |      |      |       |      | 3304  |      |      | 4889                 |      |      |      |      |
| Volume (vph)                      | 0    | 0    | 0     | 0    | 564   | 74   | 154  | 1226                 | 0    | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 0    | 564   | 74   | 154  | 1226                 | 0    | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 0    | 15    | 0    | 0    | 31                   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 0    | 623   | 0    | 0    | 1349                 | 0    | 0    | 0    | 0    |
| Parking (#/hr)                    | 0    | 0    |       |      | 0     | 0    | 0    | 0                    | 0    |      |      |      |
| Turn Type                         |      |      |       |      |       |      | Perm |                      |      |      |      |      |
| Protected Phases                  |      |      |       |      | 6     |      |      | 8                    |      |      |      |      |
| Permitted Phases                  |      |      |       |      |       |      | 8    |                      |      |      |      |      |
| Actuated Green, G (s)             |      |      |       |      | 21.0  |      |      | 23.0                 |      |      |      |      |
| Effective Green, g (s)            |      |      |       |      | 20.0  |      |      | 22.0                 |      |      |      |      |
| Actuated g/C Ratio                |      |      |       |      | 0.40  |      |      | 0.44                 |      |      |      |      |
| Clearance Time (s)                |      |      |       |      | 3.0   |      |      | 3.0                  |      |      |      |      |
| Lane Grp Cap (vph)                |      |      |       |      | 1322  |      |      | 2151                 |      |      |      |      |
| v/s Ratio Prot                    |      |      |       |      | c0.19 |      |      |                      |      |      |      |      |
| v/s Ratio Perm                    |      |      |       |      |       |      |      | 0.28                 |      |      |      |      |
| v/c Ratio                         |      |      |       |      | 0.47  |      |      | 0.63                 |      |      |      |      |
| Uniform Delay, d <sub>1</sub>     |      |      |       |      | 11.1  |      |      | 10.8                 |      |      |      |      |
| Progression Factor                |      |      |       |      | 0.38  |      |      | 1.00                 |      |      |      |      |
| Incremental Delay, d <sub>2</sub> |      |      |       |      | 1.2   |      |      | 1.4                  |      |      |      |      |
| Delay (s)                         |      |      |       |      | 5.4   |      |      | 12.2                 |      |      |      |      |
| Level of Service                  |      |      |       |      | A     |      |      | B                    |      |      |      |      |
| Approach Delay (s)                |      | 0.0  |       |      | 5.4   |      |      | 12.2                 |      |      | 0.0  |      |
| Approach LOS                      |      | A    |       |      | A     |      |      | B                    |      |      | A    |      |
| <b>Intersection Summary</b>       |      |      |       |      |       |      |      |                      |      |      |      |      |
| HCM Average Control Delay         |      |      | 10.1  |      |       |      |      | HCM Level of Service |      |      | B    |      |
| HCM Volume to Capacity ratio      |      |      | 0.55  |      |       |      |      |                      |      |      |      |      |
| Actuated Cycle Length (s)         |      |      | 50.0  |      |       |      |      | Sum of lost time (s) |      |      | 8.0  |      |
| Intersection Capacity Utilization |      |      | 51.4% |      |       |      |      | ICU Level of Service |      |      | A    |      |
| Analysis Period (min)             |      |      | 15    |      |       |      |      |                      |      |      |      |      |
| c Critical Lane Group             |      |      |       |      |       |      |      |                      |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
 2012: J Street & 21th Street

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations    |      | ↑↑↑  |      |      |      |      |      | ↑↑↑   |      |      |      |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      |      |      |      |      | 4.0   |      |      |      |      |
| Lane Util. Factor      |      | 0.91 |      |      |      |      |      | 0.91  |      |      |      |      |
| Frt                    |      | 1.00 |      |      |      |      |      | 0.97  |      |      |      |      |
| Flt Protected          |      | 1.00 |      |      |      |      |      | 1.00  |      |      |      |      |
| Satd. Flow (prot)      |      | 4899 |      |      |      |      |      | 4775  |      |      |      |      |
| Flt Permitted          |      | 1.00 |      |      |      |      |      | 1.00  |      |      |      |      |
| Satd. Flow (perm)      |      | 4899 |      |      |      |      |      | 4775  |      |      |      |      |
| Volume (vph)           | 101  | 1403 | 0    | 0    | 0    | 0    | 0    | 1028  | 242  | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 101  | 1403 | 0    | 0    | 0    | 0    | 0    | 1028  | 242  | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0    | 16   | 0    | 0    | 0    | 0    | 0    | 8     | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 1488 | 0    | 0    | 0    | 0    | 0    | 1262  | 0    | 0    | 0    | 0    |
| Parking (#/hr)         | 0    | 0    |      |      |      |      |      | 0     | 0    |      |      |      |
| Turn Type              | Perm |      |      |      |      |      |      |       |      |      |      |      |
| Protected Phases       |      | 2    |      |      |      |      |      | 8     |      |      |      |      |
| Permitted Phases       | 2    |      |      |      |      |      |      |       |      |      |      |      |
| Actuated Green, G (s)  |      | 23.0 |      |      |      |      |      | 21.0  |      |      |      |      |
| Effective Green, g (s) |      | 22.0 |      |      |      |      |      | 20.0  |      |      |      |      |
| Actuated g/C Ratio     |      | 0.44 |      |      |      |      |      | 0.40  |      |      |      |      |
| Clearance Time (s)     |      | 3.0  |      |      |      |      |      | 3.0   |      |      |      |      |
| Lane Grp Cap (vph)     |      | 2156 |      |      |      |      |      | 1910  |      |      |      |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      | c0.26 |      |      |      |      |
| v/s Ratio Perm         |      | 0.30 |      |      |      |      |      |       |      |      |      |      |
| v/c Ratio              |      | 0.69 |      |      |      |      |      | 0.66  |      |      |      |      |
| Uniform Delay, d1      |      | 11.3 |      |      |      |      |      | 12.2  |      |      |      |      |
| Progression Factor     |      | 0.47 |      |      |      |      |      | 0.26  |      |      |      |      |
| Incremental Delay, d2  |      | 1.5  |      |      |      |      |      | 1.4   |      |      |      |      |
| Delay (s)              |      | 6.8  |      |      |      |      |      | 4.6   |      |      |      |      |
| Level of Service       |      | A    |      |      |      |      |      | A     |      |      |      |      |
| Approach Delay (s)     |      | 6.8  |      |      | 0.0  |      |      | 4.6   |      |      | 0.0  |      |
| Approach LOS           |      | A    |      |      | A    |      |      | A     |      |      | A    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 5.8   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.68  |                      |     |
| Actuated Cycle Length (s)         | 50.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 61.1% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 2074: J Street & 19th Street

7/11/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR                      |
|-----------------------------------|------|------|-------|------|------|------|------|------|------|------|------|--------------------------|
| Lane Configurations               |      | ↑↑↑  |       |      |      |      |      |      |      |      | ↑↑↑  |                          |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900                     |
| Total Lost time (s)               |      | 4.0  |       |      |      |      |      |      |      |      | 4.0  |                          |
| Lane Util. Factor                 |      | 0.91 |       |      |      |      |      |      |      |      | 0.91 |                          |
| Fr't                              |      | 0.98 |       |      |      |      |      |      |      |      | 1.00 |                          |
| Flt Protected                     |      | 1.00 |       |      |      |      |      |      |      |      | 0.99 |                          |
| Satd. Flow (prot)                 |      | 4794 |       |      |      |      |      |      |      |      | 4846 |                          |
| Flt Permitted                     |      | 1.00 |       |      |      |      |      |      |      |      | 0.99 |                          |
| Satd. Flow (perm)                 |      | 4794 |       |      |      |      |      |      |      |      | 4846 |                          |
| Volume (vph)                      | 0    | 1283 | 255   | 0    | 0    | 0    | 0    | 0    | 0    | 170  | 419  | 0                        |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00                     |
| Adj. Flow (vph)                   | 0    | 1283 | 255   | 0    | 0    | 0    | 0    | 0    | 0    | 170  | 419  | 0                        |
| RTOR Reduction (vph)              | 0    | 60   | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 22   | 0                        |
| Lane Group Flow (vph)             | 0    | 1479 | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 567  | 0                        |
| Parking (#/hr)                    |      | 0    | 0     |      |      |      |      |      |      | 0    | 0    |                          |
| Turn Type                         |      |      |       |      |      |      |      |      |      | Perm |      |                          |
| Protected Phases                  |      | 2    |       |      |      |      |      |      |      |      | 4    |                          |
| Permitted Phases                  |      |      |       |      |      |      |      |      |      | 4    |      |                          |
| Actuated Green, G (s)             |      | 26.0 |       |      |      |      |      |      |      |      | 18.0 |                          |
| Effective Green, g (s)            |      | 25.0 |       |      |      |      |      |      |      |      | 17.0 |                          |
| Actuated g/C Ratio                |      | 0.50 |       |      |      |      |      |      |      |      | 0.34 |                          |
| Clearance Time (s)                |      | 3.0  |       |      |      |      |      |      |      |      | 3.0  |                          |
| Lane Grp Cap (vph)                |      | 2397 |       |      |      |      |      |      |      |      | 1648 |                          |
| v/s Ratio Prot                    |      | 0.31 |       |      |      |      |      |      |      |      |      |                          |
| v/s Ratio Perm                    |      |      |       |      |      |      |      |      |      |      | 0.12 |                          |
| v/c Ratio                         |      | 0.62 |       |      |      |      |      |      |      |      | 0.34 |                          |
| Uniform Delay, d1                 |      | 9.0  |       |      |      |      |      |      |      |      | 12.3 |                          |
| Progression Factor                |      | 1.00 |       |      |      |      |      |      |      |      | 1.00 |                          |
| Incremental Delay, d2             |      | 1.2  |       |      |      |      |      |      |      |      | 0.6  |                          |
| Delay (s)                         |      | 10.2 |       |      |      |      |      |      |      |      | 12.9 |                          |
| Level of Service                  |      | B    |       |      |      |      |      |      |      |      | B    |                          |
| Approach Delay (s)                |      | 10.2 |       |      | 0.0  |      |      | 0.0  |      |      | 12.9 |                          |
| Approach LOS                      |      | B    |       |      | A    |      |      | A    |      |      | B    |                          |
| <b>Intersection Summary</b>       |      |      |       |      |      |      |      |      |      |      |      |                          |
| HCM Average Control Delay         |      |      | 11.0  |      |      |      |      |      |      |      |      | HCM Level of Service B   |
| HCM Volume to Capacity ratio      |      |      | 0.51  |      |      |      |      |      |      |      |      |                          |
| Actuated Cycle Length (s)         |      |      | 50.0  |      |      |      |      |      |      |      |      | Sum of lost time (s) 8.0 |
| Intersection Capacity Utilization |      |      | 48.7% |      |      |      |      |      |      |      |      | ICU Level of Service A   |
| Analysis Period (min)             |      |      | 15    |      |      |      |      |      |      |      |      |                          |
| c Critical Lane Group             |      |      |       |      |      |      |      |      |      |      |      |                          |

# HCM Signalized Intersection Capacity Analysis

2088: L Street & 29th Street

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|-------|------|--|
| Lane Configurations    |      |      |      | ↙    | ↑↑    |      |      |      |      |      | ↑↑↑   | ↘    |  |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |  |
| Total Lost time (s)    |      |      |      | 4.0  | 4.0   |      |      |      |      |      | 4.0   | 4.0  |  |
| Lane Util. Factor      |      |      |      | 1.00 | 0.95  |      |      |      |      |      | 0.86  | 0.86 |  |
| Frt                    |      |      |      | 1.00 | 1.00  |      |      |      |      |      | 1.00  | 0.85 |  |
| Flt Protected          |      |      |      | 0.95 | 1.00  |      |      |      |      |      | 1.00  | 1.00 |  |
| Satd. Flow (prot)      |      |      |      | 1770 | 3539  |      |      |      |      |      | 4646  | 1226 |  |
| Flt Permitted          |      |      |      | 0.95 | 1.00  |      |      |      |      |      | 1.00  | 1.00 |  |
| Satd. Flow (perm)      |      |      |      | 1770 | 3539  |      |      |      |      |      | 4646  | 1226 |  |
| Volume (vph)           | 0    | 0    | 0    | 253  | 459   | 0    | 0    | 0    | 0    | 0    | 1123  | 152  |  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |  |
| Adj. Flow (vph)        | 0    | 0    | 0    | 253  | 459   | 0    | 0    | 0    | 0    | 0    | 1123  | 152  |  |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 26   | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 80   |  |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 227  | 459   | 0    | 0    | 0    | 0    | 0    | 1123  | 72   |  |
| Parking (#/hr)         |      |      | 0    |      |       |      |      |      |      |      | 0     | 0    |  |
| Turn Type              |      |      |      | Perm |       |      |      |      |      |      |       | Perm |  |
| Protected Phases       |      |      |      |      | 6     |      |      |      |      |      |       | 4    |  |
| Permitted Phases       |      |      |      | 6    |       |      |      |      |      |      |       | 4    |  |
| Actuated Green, G (s)  |      |      |      | 30.0 | 30.0  |      |      |      |      |      | 34.0  | 34.0 |  |
| Effective Green, g (s) |      |      |      | 29.0 | 29.0  |      |      |      |      |      | 33.0  | 33.0 |  |
| Actuated g/C Ratio     |      |      |      | 0.41 | 0.41  |      |      |      |      |      | 0.47  | 0.47 |  |
| Clearance Time (s)     |      |      |      | 3.0  | 3.0   |      |      |      |      |      | 3.0   | 3.0  |  |
| Lane Grp Cap (vph)     |      |      |      | 733  | 1466  |      |      |      |      |      | 2190  | 578  |  |
| v/s Ratio Prot         |      |      |      |      | c0.13 |      |      |      |      |      | c0.24 |      |  |
| v/s Ratio Perm         |      |      |      | 0.13 |       |      |      |      |      |      |       | 0.06 |  |
| v/c Ratio              |      |      |      | 0.31 | 0.31  |      |      |      |      |      | 0.51  | 0.12 |  |
| Uniform Delay, d1      |      |      |      | 13.8 | 13.8  |      |      |      |      |      | 12.9  | 10.4 |  |
| Progression Factor     |      |      |      | 0.33 | 0.44  |      |      |      |      |      | 0.80  | 2.05 |  |
| Incremental Delay, d2  |      |      |      | 1.1  | 0.6   |      |      |      |      |      | 0.8   | 0.4  |  |
| Delay (s)              |      |      |      | 5.7  | 6.7   |      |      |      |      |      | 11.1  | 21.7 |  |
| Level of Service       |      |      |      | A    | A     |      |      |      |      |      | B     | C    |  |
| Approach Delay (s)     |      | 0.0  |      |      | 6.3   |      |      | 0.0  |      |      | 12.4  |      |  |
| Approach LOS           |      | A    |      |      | A     |      |      | A    |      |      | B     |      |  |

## Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.2  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.42  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 43.5% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



# HCM Signalized Intersection Capacity Analysis

2239: L Street & Alhambra

7/11/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT  | WBR  | NBL  | NBT                  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|-------|------|------|------|------|----------------------|------|------|------|------|
| Lane Configurations               |      |      |       |      | ↕    |      |      | ↕                    |      |      | ↕    | ↕    |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      |      |       |      | 4.0  |      |      | 4.0                  |      |      | 4.0  | 4.0  |
| Lane Util. Factor                 |      |      |       |      | 1.00 |      |      | 1.00                 |      |      | 1.00 | 1.00 |
| Frt                               |      |      |       |      | 0.97 |      |      | 0.99                 |      |      | 1.00 | 0.85 |
| Flt Protected                     |      |      |       |      | 0.99 |      |      | 1.00                 |      |      | 1.00 | 1.00 |
| Satd. Flow (prot)                 |      |      |       |      | 1611 |      |      | 1648                 |      |      | 1857 | 1425 |
| Flt Permitted                     |      |      |       |      | 0.99 |      |      | 0.91                 |      |      | 0.95 | 1.00 |
| Satd. Flow (perm)                 |      |      |       |      | 1611 |      |      | 1506                 |      |      | 1763 | 1425 |
| Volume (vph)                      | 0    | 0    | 0     | 31   | 145  | 56   | 54   | 509                  | 59   | 42   | 657  | 291  |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 31   | 145  | 56   | 54   | 509                  | 59   | 42   | 657  | 291  |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 0    | 16   | 0    | 0    | 6                    | 0    | 0    | 0    | 108  |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 0    | 216  | 0    | 0    | 616                  | 0    | 0    | 699  | 183  |
| Parking (#/hr)                    |      |      |       | 0    | 0    | 0    | 0    | 0                    | 0    |      |      | 0    |
| Turn Type                         |      |      |       | Perm |      | Perm |      | Perm                 |      | Perm |      | Perm |
| Protected Phases                  |      |      |       |      | 6    |      |      | 8                    |      |      | 4    |      |
| Permitted Phases                  |      |      |       | 6    |      | 8    |      |                      | 4    |      |      | 4    |
| Actuated Green, G (s)             |      |      |       |      | 19.0 |      |      | 45.0                 |      |      | 45.0 | 45.0 |
| Effective Green, g (s)            |      |      |       |      | 18.0 |      |      | 44.0                 |      |      | 44.0 | 44.0 |
| Actuated g/C Ratio                |      |      |       |      | 0.26 |      |      | 0.63                 |      |      | 0.63 | 0.63 |
| Clearance Time (s)                |      |      |       |      | 3.0  |      |      | 3.0                  |      |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)                |      |      |       |      | 414  |      |      | 947                  |      |      | 1108 | 896  |
| v/s Ratio Prot                    |      |      |       |      |      |      |      |                      |      |      |      |      |
| v/s Ratio Perm                    |      |      |       |      | 0.13 |      |      | 0.41                 |      |      | 0.40 | 0.13 |
| v/c Ratio                         |      |      |       |      | 0.52 |      |      | 0.65                 |      |      | 0.63 | 0.20 |
| Uniform Delay, d1                 |      |      |       |      | 22.3 |      |      | 8.2                  |      |      | 8.0  | 5.5  |
| Progression Factor                |      |      |       |      | 1.00 |      |      | 0.32                 |      |      | 0.88 | 1.93 |
| Incremental Delay, d2             |      |      |       |      | 4.6  |      |      | 1.9                  |      |      | 2.4  | 0.4  |
| Delay (s)                         |      |      |       |      | 26.9 |      |      | 4.5                  |      |      | 9.5  | 11.1 |
| Level of Service                  |      |      |       |      | C    |      |      | A                    |      |      | A    | B    |
| Approach Delay (s)                |      | 0.0  |       |      | 26.9 |      |      | 4.5                  |      |      | 9.9  |      |
| Approach LOS                      |      | A    |       |      | C    |      |      | A                    |      |      | A    |      |
| <b>Intersection Summary</b>       |      |      |       |      |      |      |      |                      |      |      |      |      |
| HCM Average Control Delay         |      |      | 10.3  |      |      |      |      | HCM Level of Service |      |      | B    |      |
| HCM Volume to Capacity ratio      |      |      | 0.61  |      |      |      |      |                      |      |      |      |      |
| Actuated Cycle Length (s)         |      |      | 70.0  |      |      |      |      | Sum of lost time (s) |      |      | 8.0  |      |
| Intersection Capacity Utilization |      |      | 93.0% |      |      |      |      | ICU Level of Service |      |      | F    |      |
| Analysis Period (min)             |      |      | 15    |      |      |      |      |                      |      |      |      |      |
| c Critical Lane Group             |      |      |       |      |      |      |      |                      |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
 3426: L Street & 19th Street

7/11/2005



| Movement                          | EBL                 | EBT  | EBR   | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT                  | SBR  |
|-----------------------------------|---------------------|------|-------|------|------|------|------|------|------|------|----------------------|------|
| Lane Configurations               |                     |      |       |      | ↑↑   |      |      |      |      |      | ↑↑↓                  |      |
| Ideal Flow (vphpl)                | 1900                | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900                 | 1900 |
| Total Lost time (s)               |                     |      |       |      | 4.0  |      |      |      |      |      | 4.0                  |      |
| Lane Util. Factor                 |                     |      |       |      | 0.95 |      |      |      |      |      | 0.91                 |      |
| Frt                               |                     |      |       |      | 1.00 |      |      |      |      |      | 0.99                 |      |
| Flt Protected                     |                     |      |       |      | 0.99 |      |      |      |      |      | 1.00                 |      |
| Satd. Flow (prot)                 |                     |      |       |      | 3330 |      |      |      |      |      | 4883                 |      |
| Flt Permitted                     |                     |      |       |      | 0.99 |      |      |      |      |      | 1.00                 |      |
| Satd. Flow (perm)                 |                     |      |       |      | 3330 |      |      |      |      |      | 4883                 |      |
| Volume (vph)                      | 0                   | 0    | 0     | 146  | 601  | 0    | 0    | 0    | 0    | 0    | 845                  | 39   |
| Peak-hour factor, PHF             | 1.00                | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00                 | 1.00 |
| Adj. Flow (vph)                   | 0                   | 0    | 0     | 146  | 601  | 0    | 0    | 0    | 0    | 0    | 845                  | 39   |
| RTOR Reduction (vph)              | 0                   | 0    | 0     | 0    | 36   | 0    | 0    | 0    | 0    | 0    | 10                   | 0    |
| Lane Group Flow (vph)             | 0                   | 0    | 0     | 0    | 711  | 0    | 0    | 0    | 0    | 0    | 874                  | 0    |
| Parking (#/hr)                    |                     | 0    | 0     | 0    | 0    |      |      |      |      | 0    | 0                    | 0    |
| Turn Type                         |                     |      |       |      | Perm |      |      |      |      |      |                      |      |
| Protected Phases                  |                     |      |       |      | 6    |      |      |      |      |      | 4                    |      |
| Permitted Phases                  |                     |      |       |      | 6    |      |      |      |      |      |                      |      |
| Actuated Green, G (s)             |                     |      |       |      | 23.0 |      |      |      |      |      | 21.0                 |      |
| Effective Green, g (s)            |                     |      |       |      | 22.0 |      |      |      |      |      | 20.0                 |      |
| Actuated g/C Ratio                |                     |      |       |      | 0.44 |      |      |      |      |      | 0.40                 |      |
| Clearance Time (s)                |                     |      |       |      | 3.0  |      |      |      |      |      | 3.0                  |      |
| Lane Grp Cap (vph)                |                     |      |       |      | 1465 |      |      |      |      |      | 1953                 |      |
| v/s Ratio Prot                    |                     |      |       |      |      |      |      |      |      |      | c0.18                |      |
| v/s Ratio Perm                    |                     |      |       |      | 0.21 |      |      |      |      |      |                      |      |
| v/c Ratio                         |                     |      |       |      | 0.49 |      |      |      |      |      | 0.45                 |      |
| Uniform Delay, d1                 |                     |      |       |      | 10.0 |      |      |      |      |      | 11.0                 |      |
| Progression Factor                |                     |      |       |      | 0.37 |      |      |      |      |      | 0.73                 |      |
| Incremental Delay, d2             |                     |      |       |      | 1.0  |      |      |      |      |      | 0.7                  |      |
| Delay (s)                         |                     |      |       |      | 4.7  |      |      |      |      |      | 8.7                  |      |
| Level of Service                  |                     |      |       |      | A    |      |      |      |      |      | A                    |      |
| Approach Delay (s)                |                     | 0.0  |       |      | 4.7  |      |      | 0.0  |      |      | 8.7                  |      |
| Approach LOS                      |                     | A    |       |      | A    |      |      | A    |      |      | A                    |      |
| <b>Intersection Summary</b>       |                     |      |       |      |      |      |      |      |      |      |                      |      |
| HCM Average Control Delay         |                     |      | 6.9   |      |      |      |      |      |      |      | HCM Level of Service | A    |
| HCM Volume to Capacity ratio      |                     |      | 0.47  |      |      |      |      |      |      |      |                      |      |
| Actuated Cycle Length (s)         |                     |      | 50.0  |      |      |      |      |      |      |      | Sum of lost time (s) | 8.0  |
| Intersection Capacity Utilization |                     |      | 44.7% |      |      |      |      |      |      |      | ICU Level of Service | A    |
| Analysis Period (min)             |                     |      | 15    |      |      |      |      |      |      |      |                      |      |
| c                                 | Critical Lane Group |      |       |      |      |      |      |      |      |      |                      |      |

# HCM Signalized Intersection Capacity Analysis

3427: L Street & 26th St

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations    |      |      |      |      | ↕    |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor      |      |      |      |      | 0.95 |      |      | 1.00  |      |      | 1.00 |      |
| Frt                    |      |      |      |      | 0.99 |      |      | 1.00  |      |      | 0.96 |      |
| Flt Protected          |      |      |      |      | 1.00 |      |      | 0.98  |      |      | 1.00 |      |
| Satd. Flow (prot)      |      |      |      |      | 3334 |      |      | 1650  |      |      | 1603 |      |
| Flt Permitted          |      |      |      |      | 1.00 |      |      | 0.92  |      |      | 1.00 |      |
| Satd. Flow (perm)      |      |      |      |      | 3334 |      |      | 1547  |      |      | 1603 |      |
| Volume (vph)           | 0    | 0    | 0    | 14   | 514  | 26   | 26   | 54    | 0    | 0    | 64   | 31   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 14   | 514  | 26   | 26   | 54    | 0    | 0    | 64   | 31   |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 7    | 0    | 0    | 0     | 0    | 0    | 19   | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 547  | 0    | 0    | 80    | 0    | 0    | 76   | 0    |
| Parking (#/hr)         |      |      |      | 0    | 0    | 0    | 0    | 0     |      |      | 0    | 0    |
| Turn Type              |      |      |      |      | Perm |      |      | Perm  |      |      |      |      |
| Protected Phases       |      |      |      |      |      | 8    |      | 2     |      |      | 6    |      |
| Permitted Phases       |      |      |      |      | 8    |      | 2    |       |      |      |      |      |
| Actuated Green, G (s)  |      |      |      |      | 23.0 |      |      | 21.0  |      |      | 21.0 |      |
| Effective Green, g (s) |      |      |      |      | 22.0 |      |      | 20.0  |      |      | 20.0 |      |
| Actuated g/C Ratio     |      |      |      |      | 0.44 |      |      | 0.40  |      |      | 0.40 |      |
| Clearance Time (s)     |      |      |      |      | 3.0  |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      |      |      |      | 1467 |      |      | 619   |      |      | 641  |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      |       |      |      | 0.05 |      |
| v/s Ratio Perm         |      |      |      |      | 0.16 |      |      | c0.05 |      |      |      |      |
| v/c Ratio              |      |      |      |      | 0.37 |      |      | 0.13  |      |      | 0.12 |      |
| Uniform Delay, d1      |      |      |      |      | 9.4  |      |      | 9.5   |      |      | 9.5  |      |
| Progression Factor     |      |      |      |      | 1.00 |      |      | 0.73  |      |      | 1.00 |      |
| Incremental Delay, d2  |      |      |      |      | 0.7  |      |      | 0.4   |      |      | 0.4  |      |
| Delay (s)              |      |      |      |      | 10.1 |      |      | 7.4   |      |      | 9.8  |      |
| Level of Service       |      |      |      |      | B    |      |      | A     |      |      | A    |      |
| Approach Delay (s)     |      | 0.0  |      |      | 10.1 |      |      | 7.4   |      |      | 9.8  |      |
| Approach LOS           |      | A    |      |      | B    |      |      | A     |      |      | A    |      |

## Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 9.8   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.26  |                      |     |
| Actuated Cycle Length (s)         | 50.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 33.1% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3428: J Street & 29th St off ramp

7/11/2005



| Movement               | EBT   | EBR  | SBL   | SBT   | SWL2 | SWL  |
|------------------------|-------|------|-------|-------|------|------|
| Lane Configurations    | ↑↑↑   |      |       | ↑↑↑   |      | ↑↑   |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900  | 1900  | 1900 | 1900 |
| Total Lost time (s)    | 4.0   |      |       | 4.0   |      | 4.0  |
| Lane Util. Factor      | 0.91  |      |       | 0.91  |      | 0.97 |
| Flt                    | 0.97  |      |       | 1.00  |      | 1.00 |
| Flt Protected          | 1.00  |      |       | 0.99  |      | 0.95 |
| Satd. Flow (prot)      | 4754  |      |       | 4875  |      | 3433 |
| Flt Permitted          | 1.00  |      |       | 0.99  |      | 0.95 |
| Satd. Flow (perm)      | 4754  |      |       | 4875  |      | 3433 |
| Volume (vph)           | 1176  | 330  | 80    | 396   | 80   | 396  |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 1176  | 330  | 80    | 396   | 80   | 396  |
| RTOR Reduction (vph)   | 69    | 0    | 0     | 0     | 0    | 25   |
| Lane Group Flow (vph)  | 1437  | 0    | 0     | 476   | 0    | 451  |
| Parking (#/hr)         | 0     | 0    |       | 0     |      |      |
| Turn Type              |       |      | Split |       | Perm |      |
| Protected Phases       | 2     |      | 8     | 8     |      | 4    |
| Permitted Phases       |       |      |       |       | 4    |      |
| Actuated Green, G (s)  | 27.0  |      |       | 17.0  |      | 17.0 |
| Effective Green, g (s) | 26.0  |      |       | 16.0  |      | 16.0 |
| Actuated g/C Ratio     | 0.37  |      |       | 0.23  |      | 0.23 |
| Clearance Time (s)     | 3.0   |      |       | 3.0   |      | 3.0  |
| Lane Grp Cap (vph)     | 1766  |      |       | 1114  |      | 785  |
| v/s Ratio Prot         | c0.30 |      |       | c0.10 |      |      |
| v/s Ratio Perm         |       |      |       |       |      | 0.13 |
| v/c Ratio              | 0.81  |      |       | 0.43  |      | 0.57 |
| Uniform Delay, d1      | 19.8  |      |       | 23.1  |      | 24.0 |
| Progression Factor     | 0.42  |      |       | 1.00  |      | 1.00 |
| Incremental Delay, d2  | 3.2   |      |       | 1.2   |      | 3.1  |
| Delay (s)              | 11.5  |      |       | 24.3  |      | 27.0 |
| Level of Service       | B     |      |       | C     |      | C    |
| Approach Delay (s)     | 11.5  |      |       | 24.3  |      | 27.0 |
| Approach LOS           | B     |      |       | C     |      | C    |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 17.0  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.64  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 62.9% | ICU Level of Service | B    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

# HCM Signalized Intersection Capacity Analysis

3429: J Street & Alhambra

7/11/2005



| Movement               | EBL   | EBT   | EBR  | WBL   | WBT  | WBR  | NBL  | NBT  | NBR  | SBL   | SBT  | SBR  |
|------------------------|-------|-------|------|-------|------|------|------|------|------|-------|------|------|
| Lane Configurations    | ↖     | ↕     |      | ↖     | ↕    | ↗    |      | ↕    |      |       | ↕    |      |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    | 4.0   | 4.0   |      | 4.0   | 4.0  | 4.0  |      | 4.0  |      |       | 4.0  |      |
| Lane Util. Factor      | 1.00  | 0.95  |      | 0.95  | 0.95 | 1.00 |      | 0.95 |      |       | 0.95 |      |
| Frt                    | 1.00  | 0.97  |      | 1.00  | 1.00 | 0.85 |      | 0.95 |      |       | 1.00 |      |
| Flt Protected          | 0.95  | 1.00  |      | 0.95  | 0.95 | 1.00 |      | 1.00 |      |       | 0.99 |      |
| Satd. Flow (prot)      | 1770  | 3245  |      | 1681  | 1681 | 1425 |      | 3178 |      |       | 3342 |      |
| Flt Permitted          | 0.95  | 1.00  |      | 0.95  | 0.95 | 1.00 |      | 1.00 |      |       | 0.82 |      |
| Satd. Flow (perm)      | 1770  | 3245  |      | 1681  | 1681 | 1425 |      | 3178 |      |       | 2766 |      |
| Volume (vph)           | 158   | 802   | 243  | 520   | 0    | 199  | 0    | 285  | 164  | 52    | 369  | 0    |
| Peak-hour factor, PHF  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 158   | 802   | 243  | 520   | 0    | 199  | 0    | 285  | 164  | 52    | 369  | 0    |
| RTOR Reduction (vph)   | 0     | 41    | 0    | 0     | 0    | 154  | 0    | 117  | 0    | 0     | 0    | 0    |
| Lane Group Flow (vph)  | 158   | 1004  | 0    | 260   | 260  | 45   | 0    | 332  | 0    | 0     | 421  | 0    |
| Parking (#/hr)         |       | 0     | 0    |       |      | 0    |      | 0    | 0    |       | 0    |      |
| Turn Type              | Split |       |      | Split |      |      | Perm |      |      | Perm  |      |      |
| Protected Phases       | 2     | 2     |      | 6     | 6    |      | 8    |      |      | 4     |      |      |
| Permitted Phases       |       |       |      |       |      |      | 6    |      |      | 4     |      |      |
| Actuated Green, G (s)  | 27.0  | 27.0  |      | 17.0  | 17.0 | 17.0 | 17.0 |      |      | 17.0  |      |      |
| Effective Green, g (s) | 26.0  | 26.0  |      | 16.0  | 16.0 | 16.0 | 16.0 |      |      | 16.0  |      |      |
| Actuated g/C Ratio     | 0.37  | 0.37  |      | 0.23  | 0.23 | 0.23 | 0.23 |      |      | 0.23  |      |      |
| Clearance Time (s)     | 3.0   | 3.0   |      | 3.0   | 3.0  | 3.0  | 3.0  |      |      | 3.0   |      |      |
| Lane Grp Cap (vph)     | 657   | 1205  |      | 384   | 384  | 326  | 726  |      |      | 632   |      |      |
| v/s Ratio Prot         | 0.09  | c0.31 |      | c0.15 | 0.15 |      | 0.10 |      |      |       |      |      |
| v/s Ratio Perm         |       |       |      |       |      |      | 0.03 |      |      | c0.15 |      |      |
| v/c Ratio              | 0.24  | 0.83  |      | 0.68  | 0.68 | 0.14 | 0.46 |      |      | 0.67  |      |      |
| Uniform Delay, d1      | 15.2  | 20.0  |      | 24.6  | 24.6 | 21.5 | 23.3 |      |      | 24.6  |      |      |
| Progression Factor     | 0.41  | 0.46  |      | 1.00  | 1.00 | 1.00 | 0.60 |      |      | 1.00  |      |      |
| Incremental Delay, d2  | 0.8   | 6.1   |      | 9.2   | 9.2  | 0.9  | 1.9  |      |      | 5.5   |      |      |
| Delay (s)              | 6.9   | 15.3  |      | 33.9  | 33.9 | 22.4 | 16.0 |      |      | 30.1  |      |      |
| Level of Service       | A     | B     |      | C     | C    | C    | B    |      |      | C     |      |      |
| Approach Delay (s)     | 14.2  |       |      | 30.7  |      |      | 16.0 |      |      | 30.1  |      |      |
| Approach LOS           | B     |       |      | C     |      |      | B    |      |      | C     |      |      |

## Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 21.1  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.74  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 82.5% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3435: N Street & 29th Street

7/11/2005



| Movement               | EBT   | EBR  | EBR2 | WBL2  | WBL   | WBT   | SBL2 | SBL   | SBT  | SBR  |
|------------------------|-------|------|------|-------|-------|-------|------|-------|------|------|
| Lane Configurations    | ↑     | ↗    |      |       | ↖     | ↖     |      | ↗     | ↑    | ↗    |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900  | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    | 4.0   | 4.0  |      |       | 4.0   | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor      | 1.00  | 1.00 |      |       | 0.95  | 0.95  |      | 0.97  | 0.95 |      |
| Fr't                   | 1.00  | 0.85 |      |       | 1.00  | 1.00  |      | 1.00  | 1.00 |      |
| Flt Protected          | 1.00  | 1.00 |      |       | 0.95  | 0.97  |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)      | 1676  | 1425 |      |       | 1681  | 1719  |      | 3433  | 3352 |      |
| Flt Permitted          | 1.00  | 1.00 |      |       | 0.95  | 0.97  |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)      | 1676  | 1425 |      |       | 1681  | 1719  |      | 3433  | 3352 |      |
| Volume (vph)           | 384   | 224  | 48   | 129   | 168   | 79    | 32   | 986   | 508  | 11   |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 384   | 224  | 48   | 129   | 168   | 79    | 32   | 986   | 508  | 11   |
| RTOR Reduction (vph)   | 0     | 11   | 0    | 0     | 0     | 0     | 0    | 0     | 2    | 0    |
| Lane Group Flow (vph)  | 384   | 261  | 0    | 0     | 183   | 193   | 0    | 1018  | 517  | 0    |
| Parking (#/hr)         | 0     | 0    | 0    |       |       |       |      |       | 0    |      |
| Turn Type              |       | Perm |      | Split | Split |       | Perm | Perm  |      |      |
| Protected Phases       | 4     |      |      | 8     | 8     | 8     |      |       | 6    |      |
| Permitted Phases       |       | 4    |      |       |       |       | 6    | 6     |      |      |
| Actuated Green, G (s)  | 22.0  | 22.0 |      |       | 12.0  | 12.0  |      | 27.0  | 27.0 |      |
| Effective Green, g (s) | 21.0  | 21.0 |      |       | 11.0  | 11.0  |      | 26.0  | 26.0 |      |
| Actuated g/C Ratio     | 0.30  | 0.30 |      |       | 0.16  | 0.16  |      | 0.37  | 0.37 |      |
| Clearance Time (s)     | 3.0   | 3.0  |      |       | 3.0   | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     | 503   | 428  |      |       | 264   | 270   |      | 1275  | 1245 |      |
| v/s Ratio Prot         | c0.23 |      |      |       | 0.11  | c0.11 |      |       | 0.15 |      |
| v/s Ratio Perm         |       | 0.18 |      |       |       |       |      | c0.30 |      |      |
| v/c Ratio              | 0.76  | 0.61 |      |       | 0.69  | 0.71  |      | 0.80  | 0.42 |      |
| Uniform Delay, d1      | 22.2  | 21.0 |      |       | 27.9  | 28.0  |      | 19.7  | 16.4 |      |
| Progression Factor     | 0.59  | 0.55 |      |       | 0.72  | 0.80  |      | 0.91  | 0.87 |      |
| Incremental Delay, d2  | 9.4   | 5.6  |      |       | 12.9  | 13.4  |      | 4.0   | 0.8  |      |
| Delay (s)              | 22.5  | 17.1 |      |       | 33.1  | 35.9  |      | 21.9  | 15.0 |      |
| Level of Service       | C     | B    |      |       | C     | D     |      | C     | B    |      |
| Approach Delay (s)     | 20.3  |      |      |       |       | 34.5  |      |       | 19.6 |      |
| Approach LOS           | C     |      |      |       |       | C     |      |       | B    |      |

| Intersection Summary              |                     |                      |      |
|-----------------------------------|---------------------|----------------------|------|
| HCM Average Control Delay         | 21.9                | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.77                |                      |      |
| Actuated Cycle Length (s)         | 70.0                | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 69.6%               | ICU Level of Service | C    |
| Analysis Period (min)             | 15                  |                      |      |
| c                                 | Critical Lane Group |                      |      |

HCM Signalized Intersection Capacity Analysis  
3436: Capitol & Alhambra

7/11/2005

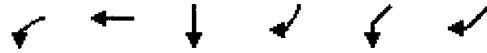


| Movement               | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|-------|-------|------|-------|-------|------|------|-------|------|------|------|------|
| Lane Configurations    |       | ↔     |      |       | ↔     |      | ↖    | ↗     | ↖    | ↗    | ↖    | ↗    |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |       | 4.0   |      |       | 4.0   |      | 4.0  | 4.0   | 4.0  | 4.0  | 4.0  | 4.0  |
| Lane Util. Factor      |       | 0.95  |      |       | 0.95  |      | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt                    |       | 0.98  |      |       | 0.98  |      | 1.00 | 1.00  | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected          |       | 0.99  |      |       | 1.00  |      | 0.95 | 1.00  | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot)      |       | 3291  |      |       | 3287  |      | 1593 | 1676  | 1425 | 1593 | 1676 | 1425 |
| Flt Permitted          |       | 0.99  |      |       | 1.00  |      | 0.29 | 1.00  | 1.00 | 0.23 | 1.00 | 1.00 |
| Satd. Flow (perm)      |       | 3291  |      |       | 3287  |      | 486  | 1676  | 1425 | 388  | 1676 | 1425 |
| Volume (vph)           | 61    | 375   | 49   | 49    | 580   | 92   | 53   | 494   | 85   | 108  | 443  | 83   |
| Peak-hour factor, PHF  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 61    | 375   | 49   | 49    | 580   | 92   | 53   | 494   | 85   | 108  | 443  | 83   |
| RTOR Reduction (vph)   | 0     | 12    | 0    | 0     | 17    | 0    | 0    | 0     | 44   | 0    | 0    | 48   |
| Lane Group Flow (vph)  | 0     | 473   | 0    | 0     | 704   | 0    | 53   | 494   | 41   | 108  | 443  | 35   |
| Parking (#/hr)         | 0     | 0     | 0    | 0     | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type              | Split |       |      | Split |       |      | Perm |       |      | Perm | Perm | Perm |
| Protected Phases       | 4     | 4     |      | 8     | 8     |      | 2    |       |      | 6    |      |      |
| Permitted Phases       |       |       |      |       |       |      | 2    |       | 2    | 6    |      | 6    |
| Actuated Green, G (s)  |       | 17.0  |      |       | 18.0  |      | 26.0 | 26.0  | 26.0 | 26.0 | 26.0 | 26.0 |
| Effective Green, g (s) |       | 16.0  |      |       | 17.0  |      | 25.0 | 25.0  | 25.0 | 25.0 | 25.0 | 25.0 |
| Actuated g/C Ratio     |       | 0.23  |      |       | 0.24  |      | 0.36 | 0.36  | 0.36 | 0.36 | 0.36 | 0.36 |
| Clearance Time (s)     |       | 3.0   |      |       | 3.0   |      | 3.0  | 3.0   | 3.0  | 3.0  | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |       | 752   |      |       | 798   |      | 174  | 599   | 509  | 139  | 599  | 509  |
| v/s Ratio Prot         |       | c0.14 |      |       | c0.21 |      |      | c0.29 |      |      | 0.26 |      |
| v/s Ratio Perm         |       |       |      |       |       |      | 0.11 |       | 0.03 | 0.28 |      | 0.02 |
| v/c Ratio              |       | 0.63  |      |       | 0.88  |      | 0.30 | 0.82  | 0.08 | 0.78 | 0.74 | 0.07 |
| Uniform Delay, d1      |       | 24.3  |      |       | 25.5  |      | 16.2 | 20.5  | 14.9 | 20.0 | 19.7 | 14.8 |
| Progression Factor     |       | 0.96  |      |       | 1.00  |      | 0.72 | 0.64  | 0.62 | 0.89 | 0.90 | 1.30 |
| Incremental Delay, d2  |       | 3.9   |      |       | 13.5  |      | 3.0  | 8.6   | 0.2  | 27.6 | 6.3  | 0.2  |
| Delay (s)              |       | 27.2  |      |       | 39.0  |      | 14.7 | 21.7  | 9.5  | 45.3 | 24.0 | 19.5 |
| Level of Service       |       | C     |      |       | D     |      | B    | C     | A    | D    | C    | B    |
| Approach Delay (s)     |       | 27.2  |      |       | 39.0  |      | 19.5 |       |      | 27.1 |      |      |
| Approach LOS           |       | C     |      |       | D     |      | B    |       |      | C    |      |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 28.7  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.79  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 79.4% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3437: P Street & 29th St off ramp

7/11/2005



| Movement               | WBL  | WBT   | SBT   | SBR  | SWL   | SWR  |
|------------------------|------|-------|-------|------|-------|------|
| Lane Configurations    | ↙    | ↑↑    | ↑↑↓   |      | ↘↘    | ↗    |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900  | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0  | 4.0   | 4.0   |      | 4.0   | 4.0  |
| Lane Util. Factor      | 1.00 | 0.95  | 0.91  |      | 0.97  | 0.91 |
| Frt                    | 1.00 | 1.00  | 0.97  |      | 0.99  | 0.85 |
| Flt Protected          | 0.95 | 1.00  | 1.00  |      | 0.96  | 1.00 |
| Satd. Flow (prot)      | 1593 | 3362  | 4791  |      | 3412  | 1441 |
| Flt Permitted          | 0.95 | 1.00  | 1.00  |      | 0.96  | 1.00 |
| Satd. Flow (perm)      | 1593 | 3362  | 4791  |      | 3412  | 1441 |
| Volume (vph)           | 157  | 666   | 543   | 111  | 333   | 182  |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 157  | 666   | 543   | 111  | 333   | 182  |
| RTOR Reduction (vph)   | 87   | 0     | 44    | 0    | 0     | 0    |
| Lane Group Flow (vph)  | 70   | 666   | 610   | 0    | 363   | 152  |
| Parking (#/hr)         | 0    | 0     | 0     | 0    |       |      |
| Turn Type              | Perm |       |       |      |       | Perm |
| Protected Phases       |      | 6     | 7     |      | 8     |      |
| Permitted Phases       | 6    |       |       |      |       | 8    |
| Actuated Green, G (s)  | 24.0 | 24.0  | 18.0  |      | 19.0  | 19.0 |
| Effective Green, g (s) | 23.0 | 23.0  | 17.0  |      | 18.0  | 18.0 |
| Actuated g/C Ratio     | 0.33 | 0.33  | 0.24  |      | 0.26  | 0.26 |
| Clearance Time (s)     | 3.0  | 3.0   | 3.0   |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)     | 523  | 1105  | 1164  |      | 877   | 371  |
| v/s Ratio Prot         |      | c0.20 | c0.13 |      | c0.11 |      |
| v/s Ratio Perm         | 0.04 |       |       |      |       | 0.11 |
| v/c Ratio              | 0.13 | 0.60  | 0.52  |      | 0.41  | 0.41 |
| Uniform Delay, d1      | 16.5 | 19.7  | 23.0  |      | 21.6  | 21.6 |
| Progression Factor     | 0.05 | 0.34  | 0.64  |      | 1.00  | 1.00 |
| Incremental Delay, d2  | 0.4  | 2.0   | 1.5   |      | 1.4   | 3.3  |
| Delay (s)              | 1.3  | 8.6   | 16.2  |      | 23.1  | 24.9 |
| Level of Service       | A    | A     | B     |      | C     | C    |
| Approach Delay (s)     |      | 7.2   | 16.2  |      | 23.6  |      |
| Approach LOS           |      | A     | B     |      | C     |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 14.4  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.52  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 52.8% | ICU Level of Service | A    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |



HCM Signalized Intersection Capacity Analysis  
3438: P Street & Alhambra

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL   | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|-------|------|-------|------|------|
| Lane Configurations    |      |      |      |      | ↕↕↕  |      | ↖    | ↗     |      | ↖     | ↗    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      | 4.0  | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor      |      |      |      |      | 0.91 |      | 1.00 | 1.00  |      | 1.00  | 1.00 |      |
| Flt                    |      |      |      |      | 0.97 |      | 1.00 | 0.94  |      | 1.00  | 0.97 |      |
| Flt Protected          |      |      |      |      | 1.00 |      | 0.95 | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)      |      |      |      |      | 4931 |      | 1770 | 1755  |      | 1770  | 1813 |      |
| Flt Permitted          |      |      |      |      | 1.00 |      | 0.95 | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)      |      |      |      |      | 4931 |      | 1770 | 1755  |      | 1770  | 1813 |      |
| Volume (vph)           | 0    | 0    | 0    | 75   | 772  | 185  | 154  | 391   | 244  | 228   | 412  | 89   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 75   | 772  | 185  | 154  | 391   | 244  | 228   | 412  | 89   |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 49   | 0    | 0    | 32    | 0    | 0     | 11   | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 983  | 0    | 154  | 603   | 0    | 228   | 490  | 0    |
| Turn Type              |      |      |      | Perm |      |      | Prot |       |      | Prot  |      |      |
| Protected Phases       |      |      |      |      | 6    |      | 3    | 8     |      | 7     | 4    |      |
| Permitted Phases       |      |      |      | 6    |      |      |      |       |      |       |      |      |
| Actuated Green, G (s)  |      |      |      |      | 18.0 |      | 10.0 | 30.0  |      | 13.0  | 33.0 |      |
| Effective Green, g (s) |      |      |      |      | 17.0 |      | 9.0  | 29.0  |      | 12.0  | 32.0 |      |
| Actuated g/C Ratio     |      |      |      |      | 0.24 |      | 0.13 | 0.41  |      | 0.17  | 0.46 |      |
| Clearance Time (s)     |      |      |      |      | 3.0  |      | 3.0  | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     |      |      |      |      | 1198 |      | 228  | 727   |      | 303   | 829  |      |
| v/s Ratio Prot         |      |      |      |      |      |      | 0.09 | c0.34 |      | c0.13 | 0.27 |      |
| v/s Ratio Perm         |      |      |      |      | 0.20 |      |      |       |      |       |      |      |
| v/c Ratio              |      |      |      |      | 0.82 |      | 0.68 | 0.83  |      | 0.75  | 0.59 |      |
| Uniform Delay, d1      |      |      |      |      | 25.1 |      | 29.1 | 18.3  |      | 27.6  | 14.1 |      |
| Progression Factor     |      |      |      |      | 1.00 |      | 1.00 | 1.00  |      | 1.06  | 0.52 |      |
| Incremental Delay, d2  |      |      |      |      | 6.4  |      | 14.9 | 10.6  |      | 10.5  | 2.0  |      |
| Delay (s)              |      |      |      |      | 31.4 |      | 44.0 | 28.9  |      | 39.9  | 9.3  |      |
| Level of Service       |      |      |      |      | C    |      | D    | C     |      | D     | A    |      |
| Approach Delay (s)     |      | 0.0  |      |      | 31.4 |      |      | 31.8  |      |       | 18.9 |      |
| Approach LOS           |      | A    |      |      | C    |      |      | C     |      |       | B    |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 28.0  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.81  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 78.7% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

3444: Q Street & 29th Street

7/11/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|-------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑↑    |      |      |      |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      |      |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 0.95  |      |      |      |      |      |      |      |      | 0.91 |      |
| Frt                    |      | 0.97  |      |      |      |      |      |      |      |      | 1.00 |      |
| Flt Protected          |      | 1.00  |      |      |      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (prot)      |      | 3446  |      |      |      |      |      |      |      |      | 5044 |      |
| Flt Permitted          |      | 1.00  |      |      |      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (perm)      |      | 3446  |      |      |      |      |      |      |      |      | 5044 |      |
| Volume (vph)           | 0    | 612   | 131  | 0    | 0    | 0    | 0    | 0    | 0    | 172  | 887  | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 612   | 131  | 0    | 0    | 0    | 0    | 0    | 0    | 172  | 887  | 0    |
| RTOR Reduction (vph)   | 0    | 26    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 41   | 0    |
| Lane Group Flow (vph)  | 0    | 717   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1018 | 0    |
| Turn Type              |      |       |      |      |      |      |      |      |      | Perm |      |      |
| Protected Phases       |      | 2     |      |      |      |      |      |      |      |      | 4    |      |
| Permitted Phases       |      |       |      |      |      |      |      |      |      | 4    |      |      |
| Actuated Green, G (s)  |      | 34.0  |      |      |      |      |      |      |      |      | 30.0 |      |
| Effective Green, g (s) |      | 33.0  |      |      |      |      |      |      |      |      | 29.0 |      |
| Actuated g/C Ratio     |      | 0.47  |      |      |      |      |      |      |      |      | 0.41 |      |
| Clearance Time (s)     |      | 3.0   |      |      |      |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 1625  |      |      |      |      |      |      |      |      | 2090 |      |
| v/s Ratio Prot         |      | c0.21 |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |       |      |      |      |      |      |      |      |      | 0.20 |      |
| v/c Ratio              |      | 0.44  |      |      |      |      |      |      |      |      | 0.49 |      |
| Uniform Delay, d1      |      | 12.3  |      |      |      |      |      |      |      |      | 15.0 |      |
| Progression Factor     |      | 1.00  |      |      |      |      |      |      |      |      | 0.38 |      |
| Incremental Delay, d2  |      | 0.9   |      |      |      |      |      |      |      |      | 0.7  |      |
| Delay (s)              |      | 13.2  |      |      |      |      |      |      |      |      | 6.4  |      |
| Level of Service       |      | B     |      |      |      |      |      |      |      |      | A    |      |
| Approach Delay (s)     |      | 13.2  |      |      | 0.0  |      |      | 0.0  |      |      | 6.4  |      |
| Approach LOS           |      | B     |      |      | A    |      |      | A    |      |      | A    |      |

## Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 9.2   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.46  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 48.4% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
3467: N Street & Alhambra

7/11/2005



| Movement                  | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|---------------------------|------|-------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations       |      | ↕     |      |      | ↕    |      |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)        | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)       |      | 4.0   |      |      | 4.0  |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor         |      | 1.00  |      |      | 1.00 |      |      | 1.00 |      |      | 1.00  |      |
| Fr <sub>t</sub>           |      | 0.97  |      |      | 0.99 |      |      | 0.99 |      |      | 0.99  |      |
| Fl <sub>t</sub> Protected |      | 0.99  |      |      | 0.99 |      |      | 1.00 |      |      | 1.00  |      |
| Satd. Flow (prot)         |      | 1611  |      |      | 1643 |      |      | 1651 |      |      | 1665  |      |
| Fl <sub>t</sub> Permitted |      | 0.89  |      |      | 0.88 |      |      | 0.97 |      |      | 0.99  |      |
| Satd. Flow (perm)         |      | 1445  |      |      | 1456 |      |      | 1611 |      |      | 1654  |      |
| Volume (vph)              | 86   | 270   | 103  | 59   | 236  | 26   | 21   | 500  | 57   | 9    | 570   | 27   |
| Peak-hour factor, PHF     | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)           | 86   | 270   | 103  | 59   | 236  | 26   | 21   | 500  | 57   | 9    | 570   | 27   |
| RTOR Reduction (vph)      | 0    | 15    | 0    | 0    | 5    | 0    | 0    | 6    | 0    | 0    | 3     | 0    |
| Lane Group Flow (vph)     | 0    | 444   | 0    | 0    | 316  | 0    | 0    | 572  | 0    | 0    | 603   | 0    |
| Parking (#/hr)            | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Turn Type                 | Perm |       |      | Perm |      |      | Perm |      |      | Perm |       |      |
| Protected Phases          |      | 4     |      |      | 8    |      |      | 2    |      |      | 6     |      |
| Permitted Phases          | 4    |       |      | 8    |      |      | 2    |      |      | 6    |       |      |
| Actuated Green, G (s)     |      | 30.0  |      |      | 30.0 |      |      | 34.0 |      |      | 34.0  |      |
| Effective Green, g (s)    |      | 29.0  |      |      | 29.0 |      |      | 33.0 |      |      | 33.0  |      |
| Actuated g/C Ratio        |      | 0.41  |      |      | 0.41 |      |      | 0.47 |      |      | 0.47  |      |
| Clearance Time (s)        |      | 3.0   |      |      | 3.0  |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)        |      | 599   |      |      | 603  |      |      | 759  |      |      | 780   |      |
| v/s Ratio Prot            |      |       |      |      |      |      |      |      |      |      |       |      |
| v/s Ratio Perm            |      | c0.31 |      |      | 0.22 |      |      | 0.36 |      |      | c0.36 |      |
| v/c Ratio                 |      | 0.74  |      |      | 0.52 |      |      | 0.75 |      |      | 0.77  |      |
| Uniform Delay, d1         |      | 17.3  |      |      | 15.3 |      |      | 15.2 |      |      | 15.4  |      |
| Progression Factor        |      | 0.74  |      |      | 1.00 |      |      | 0.60 |      |      | 0.82  |      |
| Incremental Delay, d2     |      | 7.0   |      |      | 3.2  |      |      | 3.7  |      |      | 5.5   |      |
| Delay (s)                 |      | 19.8  |      |      | 18.6 |      |      | 12.8 |      |      | 18.2  |      |
| Level of Service          |      | B     |      |      | B    |      |      | B    |      |      | B     |      |
| Approach Delay (s)        |      | 19.8  |      |      | 18.6 |      |      | 12.8 |      |      | 18.2  |      |
| Approach LOS              |      | B     |      |      | B    |      |      | B    |      |      | B     |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 17.1  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.76  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 82.5% | ICU Level of Service | E   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
5802: K Street & 29th Street

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑    | ↗    | ↖    | ↑     |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  | 4.0  | 4.0   |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00 | 1.00 | 1.00 | 1.00  |      |      |      |      |      | 0.91 |      |
| Frt                    |      | 1.00 | 0.85 | 1.00 | 1.00  |      |      |      |      |      | 0.97 |      |
| Flt Protected          |      | 1.00 | 1.00 | 0.95 | 1.00  |      |      |      |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 1863 | 1583 | 1770 | 1863  |      |      |      |      |      | 4931 |      |
| Flt Permitted          |      | 1.00 | 1.00 | 0.57 | 1.00  |      |      |      |      |      | 1.00 |      |
| Satd. Flow (perm)      |      | 1863 | 1583 | 1062 | 1863  |      |      |      |      |      | 4931 |      |
| Volume (vph)           | 0    | 248  | 169  | 207  | 426   | 0    | 0    | 0    | 0    | 87   | 882  | 210  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 248  | 169  | 207  | 426   | 0    | 0    | 0    | 0    | 87   | 882  | 210  |
| RTOR Reduction (vph)   | 0    | 0    | 33   | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 49   | 0    |
| Lane Group Flow (vph)  | 0    | 248  | 136  | 207  | 426   | 0    | 0    | 0    | 0    | 0    | 1130 | 0    |
| Turn Type              |      | Perm |      | Perm |       |      |      |      |      | Perm |      |      |
| Protected Phases       |      | 4    |      |      | 8     |      |      |      |      |      |      | 6    |
| Permitted Phases       |      |      | 4    | 8    |       |      |      |      |      | 6    |      |      |
| Actuated Green, G (s)  |      | 34.0 | 34.0 | 34.0 | 34.0  |      |      |      |      |      | 30.0 |      |
| Effective Green, g (s) |      | 33.0 | 33.0 | 33.0 | 33.0  |      |      |      |      |      | 29.0 |      |
| Actuated g/C Ratio     |      | 0.47 | 0.47 | 0.47 | 0.47  |      |      |      |      |      | 0.41 |      |
| Clearance Time (s)     |      | 3.0  | 3.0  | 3.0  | 3.0   |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 878  | 746  | 501  | 878   |      |      |      |      |      | 2043 |      |
| v/s Ratio Prot         |      | 0.13 |      |      | c0.23 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      | 0.09 | 0.19 |       |      |      |      |      |      | 0.23 |      |
| v/c Ratio              |      | 0.28 | 0.18 | 0.41 | 0.49  |      |      |      |      |      | 0.55 |      |
| Uniform Delay, d1      |      | 11.3 | 10.7 | 12.1 | 12.7  |      |      |      |      |      | 15.6 |      |
| Progression Factor     |      | 0.68 | 0.52 | 0.89 | 0.91  |      |      |      |      |      | 0.70 |      |
| Incremental Delay, d2  |      | 0.8  | 0.5  | 2.2  | 1.7   |      |      |      |      |      | 0.9  |      |
| Delay (s)              |      | 8.4  | 6.1  | 13.0 | 13.2  |      |      |      |      |      | 11.8 |      |
| Level of Service       |      | A    | A    | B    | B     |      |      |      |      |      | B    |      |
| Approach Delay (s)     |      | 7.5  |      |      | 13.1  |      |      | 0.0  |      |      | 11.8 |      |
| Approach LOS           |      | A    |      |      | B     |      |      | A    |      |      | B    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.4  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.52  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 59.2% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
5848: J Street & 30th Street

7/11/2005



| Movement               | EBL2 | EBL  | EBT  | WBR2 | NBL  | NBT  | NBR  |
|------------------------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↵    | ↕↕↕  | ↗    | ↖    | ↕↕   |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  |      | 4.0  | 4.0  |      |
| Lane Util. Factor      |      | 0.86 | 0.86 |      | 0.91 | 0.91 |      |
| Frt                    |      | 1.00 | 1.00 |      | 1.00 | 0.96 |      |
| Flt Protected          |      | 0.95 | 1.00 |      | 0.95 | 0.99 |      |
| Satd. Flow (prot)      |      | 1522 | 4642 |      | 1610 | 3226 |      |
| Flt Permitted          |      | 0.95 | 1.00 |      | 0.95 | 0.99 |      |
| Satd. Flow (perm)      |      | 1522 | 4642 |      | 1610 | 3226 |      |
| Volume (vph)           | 196  | 206  | 1070 | 0    | 377  | 326  | 157  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 196  | 206  | 1070 | 0    | 377  | 326  | 157  |
| RTOR Reduction (vph)   | 0    | 54   | 0    | 0    | 0    | 30   | 0    |
| Lane Group Flow (vph)  | 0    | 329  | 1089 | 0    | 282  | 548  | 0    |
| Parking (#/hr)         |      |      | 0    | 0    |      |      | 0    |
| Turn Type              | Perm | Perm |      | Free | Perm |      |      |
| Protected Phases       |      |      | 2    |      |      | 8    |      |
| Permitted Phases       | 2    | 2    |      | Free | 8    |      |      |
| Actuated Green, G (s)  |      | 34.0 | 34.0 |      | 30.0 | 30.0 |      |
| Effective Green, g (s) |      | 33.0 | 33.0 |      | 29.0 | 29.0 |      |
| Actuated g/C Ratio     |      | 0.47 | 0.47 |      | 0.41 | 0.41 |      |
| Clearance Time (s)     |      | 3.0  | 3.0  |      | 3.0  | 3.0  |      |
| Lane Grp Cap (vph)     |      | 718  | 2188 |      | 667  | 1336 |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      | 0.22 | 0.23 |      | 0.18 | 0.17 |      |
| v/c Ratio              |      | 0.46 | 0.50 |      | 0.42 | 0.41 |      |
| Uniform Delay, d1      |      | 12.5 | 12.8 |      | 14.6 | 14.5 |      |
| Progression Factor     |      | 0.12 | 0.29 |      | 0.59 | 0.53 |      |
| Incremental Delay, d2  |      | 1.5  | 0.6  |      | 1.8  | 0.8  |      |
| Delay (s)              |      | 3.0  | 4.3  |      | 10.3 | 8.5  |      |
| Level of Service       |      | A    | A    |      | B    | A    |      |
| Approach Delay (s)     |      |      | 3.9  |      |      | 9.1  |      |
| Approach LOS           |      |      | A    |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 5.8   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.46  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 45.0% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

# HCM Signalized Intersection Capacity Analysis

5849: L Street & 30th Street

7/11/2005



| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|---------------------------|------|------|------|------|-------|------|------|-------|------|------|------|------|
| Lane Configurations       |      |      |      |      | ↑↑↑   |      | ↖    | ↑↑↑   |      |      |      |      |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |      |      |      |      | 4.0   |      | 4.0  | 4.0   |      |      |      |      |
| Lane Util. Factor         |      |      |      |      | 0.91  |      | 0.86 | 0.86  |      |      |      |      |
| Fr <sub>t</sub>           |      |      |      |      | 0.98  |      | 1.00 | 1.00  |      |      |      |      |
| Fl <sub>t</sub> Protected |      |      |      |      | 1.00  |      | 0.95 | 1.00  |      |      |      |      |
| Satd. Flow (prot)         |      |      |      |      | 4987  |      | 1522 | 4646  |      |      |      |      |
| Fl <sub>t</sub> Permitted |      |      |      |      | 1.00  |      | 0.95 | 1.00  |      |      |      |      |
| Satd. Flow (perm)         |      |      |      |      | 4987  |      | 1522 | 4646  |      |      |      |      |
| Volume (vph)              | 0    | 0    | 0    | 0    | 444   | 66   | 175  | 1266  | 0    | 0    | 0    | 0    |
| Peak-hour factor, PHF     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 0    | 0    | 0    | 0    | 444   | 66   | 175  | 1266  | 0    | 0    | 0    | 0    |
| RTOR Reduction (vph)      | 0    | 0    | 0    | 0    | 22    | 0    | 88   | 0     | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)     | 0    | 0    | 0    | 0    | 488   | 0    | 88   | 1266  | 0    | 0    | 0    | 0    |
| Parking (#/hr)            |      |      |      |      |       | 0    |      | 0     |      |      |      |      |
| Turn Type                 |      |      |      |      |       |      | Perm |       |      |      |      |      |
| Protected Phases          |      |      |      |      | 6     |      |      | 8     |      |      |      |      |
| Permitted Phases          |      |      |      |      |       |      | 8    |       |      |      |      |      |
| Actuated Green, G (s)     |      |      |      |      | 28.0  |      | 36.0 | 36.0  |      |      |      |      |
| Effective Green, g (s)    |      |      |      |      | 27.0  |      | 35.0 | 35.0  |      |      |      |      |
| Actuated g/C Ratio        |      |      |      |      | 0.39  |      | 0.50 | 0.50  |      |      |      |      |
| Clearance Time (s)        |      |      |      |      | 3.0   |      | 3.0  | 3.0   |      |      |      |      |
| Lane Grp Cap (vph)        |      |      |      |      | 1924  |      | 761  | 2323  |      |      |      |      |
| v/s Ratio Prot            |      |      |      |      | c0.10 |      |      | c0.27 |      |      |      |      |
| v/s Ratio Perm            |      |      |      |      |       |      | 0.06 |       |      |      |      |      |
| v/c Ratio                 |      |      |      |      | 0.25  |      | 0.11 | 0.54  |      |      |      |      |
| Uniform Delay, d1         |      |      |      |      | 14.6  |      | 9.3  | 12.0  |      |      |      |      |
| Progression Factor        |      |      |      |      | 1.11  |      | 0.09 | 0.53  |      |      |      |      |
| Incremental Delay, d2     |      |      |      |      | 0.3   |      | 0.3  | 0.9   |      |      |      |      |
| Delay (s)                 |      |      |      |      | 16.5  |      | 1.1  | 7.2   |      |      |      |      |
| Level of Service          |      |      |      |      | B     |      | A    | A     |      |      |      |      |
| Approach Delay (s)        |      | 0.0  |      |      | 16.5  |      |      | 6.5   |      |      | 0.0  |      |
| Approach LOS              |      | A    |      |      | B     |      |      | A     |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 9.1   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.42  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 43.5% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
5880: N Street & 30th Street

7/11/2005



| Movement               | EBL  | EBT   | WBT  | WBR  | NBL  | NBT  | NBR   | NEL2 | NEL   | NER  |
|------------------------|------|-------|------|------|------|------|-------|------|-------|------|
| Lane Configurations    | ↖    | ↑     | ↗    |      |      | ↑↑↑  |       |      | ↖↗    |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0  | 4.0   | 4.0  |      |      | 4.0  |       |      | 4.0   |      |
| Lane Util. Factor      | 1.00 | 1.00  | 1.00 |      |      | 0.91 |       |      | 0.97  |      |
| Frt                    | 1.00 | 1.00  | 0.97 |      |      | 0.98 |       |      | 0.97  |      |
| Flt Protected          | 0.95 | 1.00  | 1.00 |      |      | 0.99 |       |      | 0.96  |      |
| Satd. Flow (prot)      | 1770 | 1863  | 1806 |      |      | 4967 |       |      | 3375  |      |
| Flt Permitted          | 0.50 | 1.00  | 1.00 |      |      | 0.99 |       |      | 0.96  |      |
| Satd. Flow (perm)      | 933  | 1863  | 1806 |      |      | 4967 |       |      | 3375  |      |
| Volume (vph)           | 94   | 331   | 204  | 59   | 48   | 308  | 47    | 118  | 389   | 116  |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 94   | 331   | 204  | 59   | 48   | 308  | 47    | 118  | 389   | 116  |
| RTOR Reduction (vph)   | 0    | 0     | 15   | 0    | 0    | 24   | 0     | 0    | 0     | 0    |
| Lane Group Flow (vph)  | 94   | 331   | 248  | 0    | 0    | 379  | 0     | 0    | 623   | 0    |
| Turn Type              | Perm |       |      | Perm |      |      | Split |      |       |      |
| Protected Phases       |      | 4     | 8    |      |      | 2    |       | 6    | 6     |      |
| Permitted Phases       | 4    |       |      |      | 2    |      |       |      |       |      |
| Actuated Green, G (s)  | 25.0 | 25.0  | 25.0 |      |      | 12.0 |       |      | 24.0  |      |
| Effective Green, g (s) | 24.0 | 24.0  | 24.0 |      |      | 11.0 |       |      | 23.0  |      |
| Actuated g/C Ratio     | 0.34 | 0.34  | 0.34 |      |      | 0.16 |       |      | 0.33  |      |
| Clearance Time (s)     | 3.0  | 3.0   | 3.0  |      |      | 3.0  |       |      | 3.0   |      |
| Lane Grp Cap (vph)     | 320  | 639   | 619  |      |      | 781  |       |      | 1109  |      |
| v/s Ratio Prot         |      | c0.18 | 0.14 |      |      |      |       |      | c0.18 |      |
| v/s Ratio Perm         | 0.10 |       |      |      |      | 0.08 |       |      |       |      |
| v/c Ratio              | 0.29 | 0.52  | 0.40 |      |      | 0.49 |       |      | 0.56  |      |
| Uniform Delay, d1      | 16.8 | 18.4  | 17.5 |      |      | 26.9 |       |      | 19.4  |      |
| Progression Factor     | 0.13 | 0.16  | 0.34 |      |      | 0.98 |       |      | 1.00  |      |
| Incremental Delay, d2  | 1.5  | 1.9   | 1.6  |      |      | 2.1  |       |      | 2.1   |      |
| Delay (s)              | 3.7  | 4.8   | 7.5  |      |      | 28.5 |       |      | 21.4  |      |
| Level of Service       | A    | A     | A    |      |      | C    |       |      | C     |      |
| Approach Delay (s)     |      | 4.6   | 7.5  |      |      | 28.5 |       |      | 21.4  |      |
| Approach LOS           |      | A     | A    |      |      | C    |       |      | C     |      |

| Intersection Summary              |  |       |                      |      |
|-----------------------------------|--|-------|----------------------|------|
| HCM Average Control Delay         |  | 16.8  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      |  | 0.53  |                      |      |
| Actuated Cycle Length (s)         |  | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization |  | 58.9% | ICU Level of Service | B    |
| Analysis Period (min)             |  | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
5882: P Street & 30th Street

7/11/2005



| Movement               | WBT   | WBR  | WBR2 | NBL2 | NBL   | NBT  |
|------------------------|-------|------|------|------|-------|------|
| Lane Configurations    | ↑↑↑   |      |      |      | ↑     | ↑↑↑  |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0   |      |      |      | 4.0   | 4.0  |
| Lane Util. Factor      | 0.91  |      |      |      | 1.00  | 0.91 |
| Frt                    | 0.94  |      |      |      | 1.00  | 1.00 |
| Flt Protected          | 1.00  |      |      |      | 0.95  | 1.00 |
| Satd. Flow (prot)      | 4800  |      |      |      | 1593  | 4916 |
| Flt Permitted          | 1.00  |      |      |      | 0.95  | 1.00 |
| Satd. Flow (perm)      | 4800  |      |      |      | 1593  | 4916 |
| Volume (vph)           | 679   | 273  | 132  | 110  | 440   | 332  |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 679   | 273  | 132  | 110  | 440   | 332  |
| RTOR Reduction (vph)   | 26    | 0    | 0    | 0    | 13    | 0    |
| Lane Group Flow (vph)  | 1058  | 0    | 0    | 0    | 537   | 332  |
| Parking (#/hr)         |       | 0    | 0    | 0    | 0     | 0    |
| Turn Type              |       |      |      | Perm | Perm  |      |
| Protected Phases       | 6     |      |      |      |       | 8    |
| Permitted Phases       |       |      |      | 8    | 8     |      |
| Actuated Green, G (s)  | 26.0  |      |      |      | 38.0  | 38.0 |
| Effective Green, g (s) | 25.0  |      |      |      | 37.0  | 37.0 |
| Actuated g/C Ratio     | 0.36  |      |      |      | 0.53  | 0.53 |
| Clearance Time (s)     | 3.0   |      |      |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)     | 1714  |      |      |      | 842   | 2598 |
| v/s Ratio Prot         | c0.22 |      |      |      |       | 0.07 |
| v/s Ratio Perm         |       |      |      |      | c0.34 |      |
| v/c Ratio              | 0.62  |      |      |      | 0.64  | 0.13 |
| Uniform Delay, d1      | 18.6  |      |      |      | 11.7  | 8.3  |
| Progression Factor     | 0.27  |      |      |      | 1.00  | 1.00 |
| Incremental Delay, d2  | 1.1   |      |      |      | 3.7   | 0.1  |
| Delay (s)              | 6.2   |      |      |      | 15.4  | 8.4  |
| Level of Service       | A     |      |      |      | B     | A    |
| Approach Delay (s)     | 6.2   |      |      |      |       | 12.8 |
| Approach LOS           | A     |      |      |      |       | B    |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 9.2   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.63  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 59.3% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
5886: Capitol & 30th Street

7/11/2005



| Movement               | EBL   | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|-------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    | ↖     | ↕    |      |      | ↕     |      |      | ↕    |      |      |      |      |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0   | 4.0  |      |      | 4.0   |      |      | 4.0  |      |      |      |      |
| Lane Util. Factor      | 1.00  | 0.95 |      |      | 0.95  |      |      | 0.91 |      |      |      |      |
| Fr't                   | 1.00  | 1.00 |      |      | 0.97  |      |      | 0.98 |      |      |      |      |
| Flt Protected          | 0.95  | 1.00 |      |      | 1.00  |      |      | 1.00 |      |      |      |      |
| Satd. Flow (prot)      | 1770  | 3539 |      |      | 3449  |      |      | 4980 |      |      |      |      |
| Flt Permitted          | 0.95  | 1.00 |      |      | 1.00  |      |      | 1.00 |      |      |      |      |
| Satd. Flow (perm)      | 1770  | 3539 |      |      | 3449  |      |      | 4980 |      |      |      |      |
| Volume (vph)           | 112   | 401  | 0    | 0    | 467   | 96   | 68   | 692  | 96   | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 112   | 401  | 0    | 0    | 467   | 96   | 68   | 692  | 96   | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0     | 0    | 0    | 0    | 25    | 0    | 0    | 22   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 112   | 401  | 0    | 0    | 538   | 0    | 0    | 834  | 0    | 0    | 0    | 0    |
| Turn Type              | Prot  |      |      | Perm |       |      |      |      |      |      |      |      |
| Protected Phases       | 7     | 4    |      |      | 8     |      |      | 2    |      |      |      |      |
| Permitted Phases       |       |      |      |      |       |      | 2    |      |      |      |      |      |
| Actuated Green, G (s)  | 16.0  | 42.0 |      |      | 23.0  |      |      | 22.0 |      |      |      |      |
| Effective Green, g (s) | 15.0  | 41.0 |      |      | 22.0  |      |      | 21.0 |      |      |      |      |
| Actuated g/C Ratio     | 0.21  | 0.59 |      |      | 0.31  |      |      | 0.30 |      |      |      |      |
| Clearance Time (s)     | 3.0   | 3.0  |      |      | 3.0   |      |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)     | 379   | 2073 |      |      | 1084  |      |      | 1494 |      |      |      |      |
| v/s Ratio Prot         | c0.06 | 0.11 |      |      | c0.16 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |       |      |      |      |       |      |      | 0.17 |      |      |      |      |
| v/c Ratio              | 0.30  | 0.19 |      |      | 0.50  |      |      | 0.56 |      |      |      |      |
| Uniform Delay, d1      | 23.1  | 6.8  |      |      | 19.5  |      |      | 20.6 |      |      |      |      |
| Progression Factor     | 0.67  | 0.55 |      |      | 0.22  |      |      | 0.92 |      |      |      |      |
| Incremental Delay, d2  | 1.8   | 0.2  |      |      | 1.0   |      |      | 1.3  |      |      |      |      |
| Delay (s)              | 17.2  | 3.9  |      |      | 5.4   |      |      | 20.2 |      |      |      |      |
| Level of Service       | B     | A    |      |      | A     |      |      | C    |      |      |      |      |
| Approach Delay (s)     |       | 6.8  |      |      | 5.4   |      |      | 20.2 |      |      | 0.0  |      |
| Approach LOS           |       | A    |      |      | A     |      |      | C    |      |      | A    |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 12.3  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.47  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 65.2% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
5888: Capitol & 29th Street

7/11/2005



| Movement                          | EBL  | EBT  | EBR   | WBL   | WBT  | WBR                  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|-------|-------|------|----------------------|------|------|------|------|------|------|
| Lane Configurations               |      | ↑↑   |       | ↘     | ↑↑   |                      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900  | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0  |       | 4.0   | 4.0  |                      |      |      |      |      | 4.0  |      |
| Lane Util. Factor                 |      | 0.95 |       | 1.00  | 0.95 |                      |      |      |      |      | 0.91 |      |
| Fr <sub>t</sub>                   |      | 0.95 |       | 1.00  | 1.00 |                      |      |      |      |      | 0.99 |      |
| Fl <sub>t</sub> Protected         |      | 1.00 |       | 0.95  | 1.00 |                      |      |      |      |      | 1.00 |      |
| Satd. Flow (prot)                 |      | 3195 |       | 1770  | 3539 |                      |      |      |      |      | 4865 |      |
| Fl <sub>t</sub> Permitted         |      | 1.00 |       | 0.39  | 1.00 |                      |      |      |      |      | 1.00 |      |
| Satd. Flow (perm)                 |      | 3195 |       | 724   | 3539 |                      |      |      |      |      | 4865 |      |
| Volume (vph)                      | 0    | 394  | 196   | 198   | 413  | 0                    | 0    | 0    | 0    | 123  | 1208 | 55   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 394  | 196   | 198   | 413  | 0                    | 0    | 0    | 0    | 123  | 1208 | 55   |
| RTOR Reduction (vph)              | 0    | 8    | 0     | 0     | 0    | 0                    | 0    | 0    | 0    | 0    | 6    | 0    |
| Lane Group Flow (vph)             | 0    | 583  | 0     | 198   | 413  | 0                    | 0    | 0    | 0    | 0    | 1380 | 0    |
| Parking (#/hr)                    |      | 0    | 0     |       |      |                      |      |      |      |      | 0    | 0    |
| Turn Type                         |      |      |       | Perm  |      |                      |      |      |      |      | Perm |      |
| Protected Phases                  |      | 4    |       |       | 8    |                      |      |      |      |      |      | 6    |
| Permitted Phases                  |      |      |       | 8     |      |                      |      |      |      | 6    |      |      |
| Actuated Green, G (s)             |      | 36.0 |       | 36.0  | 36.0 |                      |      |      |      |      | 28.0 |      |
| Effective Green, g (s)            |      | 35.0 |       | 35.0  | 35.0 |                      |      |      |      |      | 27.0 |      |
| Actuated g/C Ratio                |      | 0.50 |       | 0.50  | 0.50 |                      |      |      |      |      | 0.39 |      |
| Clearance Time (s)                |      | 3.0  |       | 3.0   | 3.0  |                      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |      | 1598 |       | 362   | 1770 |                      |      |      |      |      | 1877 |      |
| v/s Ratio Prot                    |      | 0.18 |       |       | 0.12 |                      |      |      |      |      |      |      |
| v/s Ratio Perm                    |      |      |       | c0.27 |      |                      |      |      |      |      | 0.28 |      |
| v/c Ratio                         |      | 0.36 |       | 0.55  | 0.23 |                      |      |      |      |      | 0.74 |      |
| Uniform Delay, d1                 |      | 10.7 |       | 12.0  | 9.9  |                      |      |      |      |      | 18.4 |      |
| Progression Factor                |      | 0.57 |       | 0.43  | 0.32 |                      |      |      |      |      | 0.39 |      |
| Incremental Delay, d2             |      | 0.6  |       | 5.3   | 0.3  |                      |      |      |      |      | 2.3  |      |
| Delay (s)                         |      | 6.7  |       | 10.4  | 3.5  |                      |      |      |      |      | 9.4  |      |
| Level of Service                  |      | A    |       | B     | A    |                      |      |      |      |      | A    |      |
| Approach Delay (s)                |      | 6.7  |       |       | 5.7  |                      |      | 0.0  |      |      | 9.4  |      |
| Approach LOS                      |      | A    |       |       | A    |                      |      | A    |      |      | A    |      |
| <b>Intersection Summary</b>       |      |      |       |       |      |                      |      |      |      |      |      |      |
| HCM Average Control Delay         |      |      | 7.9   |       |      | HCM Level of Service |      |      |      |      | A    |      |
| HCM Volume to Capacity ratio      |      |      | 0.63  |       |      |                      |      |      |      |      |      |      |
| Actuated Cycle Length (s)         |      |      | 70.0  |       |      | Sum of lost time (s) |      |      |      |      | 8.0  |      |
| Intersection Capacity Utilization |      |      | 65.2% |       |      | ICU Level of Service |      |      |      |      | C    |      |
| Analysis Period (min)             |      |      | 15    |       |      |                      |      |      |      |      |      |      |
| c Critical Lane Group             |      |      |       |       |      |                      |      |      |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
5890: Capitol & 26th St

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|-------|------|
| Lane Configurations    | ↖    | ↗    |      | ↖    | ↗     |      |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0  | 4.0  |      | 4.0  | 4.0   |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor      | 1.00 | 1.00 |      | 1.00 | 1.00  |      |      | 1.00 |      |      | 1.00  |      |
| Frt                    | 1.00 | 1.00 |      | 1.00 | 0.99  |      |      | 0.97 |      |      | 0.98  |      |
| Flt Protected          | 0.95 | 1.00 |      | 0.95 | 1.00  |      |      | 0.99 |      |      | 0.98  |      |
| Satd. Flow (prot)      | 1770 | 1671 |      | 1770 | 1663  |      |      | 1622 |      |      | 1623  |      |
| Flt Permitted          | 0.43 | 1.00 |      | 0.45 | 1.00  |      |      | 0.98 |      |      | 0.92  |      |
| Satd. Flow (perm)      | 802  | 1671 |      | 839  | 1663  |      |      | 1602 |      |      | 1522  |      |
| Volume (vph)           | 12   | 393  | 8    | 23   | 399   | 23   | 7    | 48   | 14   | 29   | 50    | 11   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 12   | 393  | 8    | 23   | 399   | 23   | 7    | 48   | 14   | 29   | 50    | 11   |
| RTOR Reduction (vph)   | 0    | 2    | 0    | 0    | 4     | 0    | 0    | 9    | 0    | 0    | 7     | 0    |
| Lane Group Flow (vph)  | 12   | 399  | 0    | 23   | 418   | 0    | 0    | 60   | 0    | 0    | 83    | 0    |
| Parking (#/hr)         |      | 0    | 0    |      | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Turn Type              | Perm |      |      | Perm |       |      | Perm |      |      | Perm |       |      |
| Protected Phases       |      | 4    |      |      | 8     |      |      | 2    |      |      | 6     |      |
| Permitted Phases       | 4    |      |      | 8    |       |      | 2    |      |      | 6    |       |      |
| Actuated Green, G (s)  | 25.0 | 25.0 |      | 25.0 | 25.0  |      |      | 19.0 |      |      | 19.0  |      |
| Effective Green, g (s) | 24.0 | 24.0 |      | 24.0 | 24.0  |      |      | 18.0 |      |      | 18.0  |      |
| Actuated g/C Ratio     | 0.48 | 0.48 |      | 0.48 | 0.48  |      |      | 0.36 |      |      | 0.36  |      |
| Clearance Time (s)     | 3.0  | 3.0  |      | 3.0  | 3.0   |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)     | 385  | 802  |      | 403  | 798   |      |      | 577  |      |      | 548   |      |
| v/s Ratio Prot         |      | 0.24 |      |      | c0.25 |      |      |      |      |      |       |      |
| v/s Ratio Perm         | 0.01 |      |      | 0.03 |       |      |      | 0.04 |      |      | c0.05 |      |
| v/c Ratio              | 0.03 | 0.50 |      | 0.06 | 0.52  |      |      | 0.10 |      |      | 0.15  |      |
| Uniform Delay, d1      | 6.9  | 8.9  |      | 7.0  | 9.0   |      |      | 10.6 |      |      | 10.8  |      |
| Progression Factor     | 1.00 | 1.00 |      | 1.00 | 1.00  |      |      | 1.00 |      |      | 0.69  |      |
| Incremental Delay, d2  | 0.2  | 2.2  |      | 0.3  | 2.5   |      |      | 0.4  |      |      | 0.6   |      |
| Delay (s)              | 7.0  | 11.1 |      | 7.2  | 11.5  |      |      | 11.0 |      |      | 8.1   |      |
| Level of Service       | A    | B    |      | A    | B     |      |      | B    |      |      | A     |      |
| Approach Delay (s)     |      | 11.0 |      |      | 11.3  |      |      | 11.0 |      |      | 8.1   |      |
| Approach LOS           |      | B    |      |      | B     |      |      | B    |      |      | A     |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.8  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.36  |                      |     |
| Actuated Cycle Length (s)         | 50.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 40.3% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
6481: J Street & 28th Street

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations    |      | ↕↕↕  |      |      |      |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      |      |      |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor      |      | 0.91 |      |      |      |      |      | 1.00  |      |      | 1.00 |      |
| Frt                    |      | 0.99 |      |      |      |      |      | 0.93  |      |      | 1.00 |      |
| Flt Protected          |      | 1.00 |      |      |      |      |      | 1.00  |      |      | 0.99 |      |
| Satd. Flow (prot)      |      | 4879 |      |      |      |      |      | 1553  |      |      | 1657 |      |
| Flt Permitted          |      | 1.00 |      |      |      |      |      | 1.00  |      |      | 0.92 |      |
| Satd. Flow (perm)      |      | 4879 |      |      |      |      |      | 1553  |      |      | 1546 |      |
| Volume (vph)           | 44   | 1428 | 62   | 0    | 0    | 0    | 0    | 154   | 186  | 13   | 41   | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 44   | 1428 | 62   | 0    | 0    | 0    | 0    | 154   | 186  | 13   | 41   | 0    |
| RTOR Reduction (vph)   | 0    | 7    | 0    | 0    | 0    | 0    | 0    | 9     | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 1527 | 0    | 0    | 0    | 0    | 0    | 331   | 0    | 0    | 54   | 0    |
| Parking (#/hr)         | 0    | 0    | 0    |      |      |      |      | 0     | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      |      |      |      |      | Perm |       |      |      |      |      |
| Protected Phases       |      | 4    |      |      |      |      |      | 2     |      |      | 6    |      |
| Permitted Phases       | 4    |      |      |      |      |      |      |       |      | 6    |      |      |
| Actuated Green, G (s)  |      | 33.0 |      |      |      |      |      | 31.0  |      |      | 31.0 |      |
| Effective Green, g (s) |      | 32.0 |      |      |      |      |      | 30.0  |      |      | 30.0 |      |
| Actuated g/C Ratio     |      | 0.46 |      |      |      |      |      | 0.43  |      |      | 0.43 |      |
| Clearance Time (s)     |      | 3.0  |      |      |      |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 2230 |      |      |      |      |      | 666   |      |      | 663  |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      | c0.21 |      |      |      |      |
| v/s Ratio Perm         |      | 0.31 |      |      |      |      |      |       |      |      | 0.03 |      |
| v/c Ratio              |      | 0.68 |      |      |      |      |      | 0.50  |      |      | 0.08 |      |
| Uniform Delay, d1      |      | 15.0 |      |      |      |      |      | 14.5  |      |      | 11.8 |      |
| Progression Factor     |      | 1.00 |      |      |      |      |      | 0.70  |      |      | 1.00 |      |
| Incremental Delay, d2  |      | 1.7  |      |      |      |      |      | 2.6   |      |      | 0.2  |      |
| Delay (s)              |      | 16.8 |      |      |      |      |      | 12.9  |      |      | 12.1 |      |
| Level of Service       |      | B    |      |      |      |      |      | B     |      |      | B    |      |
| Approach Delay (s)     |      | 16.8 |      |      | 0.0  |      |      | 12.9  |      |      | 12.1 |      |
| Approach LOS           |      | B    |      |      | A    |      |      | B     |      |      | B    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 15.9  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.59  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 56.0% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6482: K Street & 28th Street

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↕    | ↗    |      | ↕    | ↗    |      | ↕    | ↗    |      | ↕    | ↗    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  |      | 4.0  | 4.0  |      | 4.0  | 4.0  |      | 4.0  | 4.0  |
| Lane Util. Factor      |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |
| Fr't                   |      | 1.00 | 0.85 |      | 1.00 | 0.85 |      | 1.00 | 0.85 |      | 1.00 | 0.85 |
| Flt Protected          |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 0.99 | 1.00 |
| Satd. Flow (prot)      |      | 1675 | 1425 |      | 1671 | 1425 |      | 1669 | 1425 |      | 1663 | 1425 |
| Flt Permitted          |      | 0.99 | 1.00 |      | 0.97 | 1.00 |      | 0.98 | 1.00 |      | 0.95 | 1.00 |
| Satd. Flow (perm)      |      | 1663 | 1425 |      | 1621 | 1425 |      | 1638 | 1425 |      | 1588 | 1425 |
| Volume (vph)           | 7    | 359  | 22   | 34   | 517  | 93   | 14   | 153  | 53   | 22   | 115  | 31   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 7    | 359  | 22   | 34   | 517  | 93   | 14   | 153  | 53   | 22   | 115  | 31   |
| RTOR Reduction (vph)   | 0    | 0    | 9    | 0    | 0    | 30   | 0    | 0    | 38   | 0    | 0    | 22   |
| Lane Group Flow (vph)  | 0    | 366  | 13   | 0    | 551  | 63   | 0    | 167  | 15   | 0    | 137  | 9    |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      | Perm | Perm |      | Perm | Perm |      | Perm | Perm |      | Perm |
| Protected Phases       |      | 4    |      |      | 8    |      |      | 2    |      |      | 6    |      |
| Permitted Phases       | 4    |      | 4    | 8    |      | 8    | 2    |      | 2    | 6    |      | 6    |
| Actuated Green, G (s)  |      | 43.0 | 43.0 |      | 43.0 | 43.0 |      | 21.0 | 21.0 |      | 21.0 | 21.0 |
| Effective Green, g (s) |      | 42.0 | 42.0 |      | 42.0 | 42.0 |      | 20.0 | 20.0 |      | 20.0 | 20.0 |
| Actuated g/C Ratio     |      | 0.60 | 0.60 |      | 0.60 | 0.60 |      | 0.29 | 0.29 |      | 0.29 | 0.29 |
| Clearance Time (s)     |      | 3.0  | 3.0  |      | 3.0  | 3.0  |      | 3.0  | 3.0  |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |      | 998  | 855  |      | 973  | 855  |      | 468  | 407  |      | 454  | 407  |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      | 0.22 | 0.01 |      | 0.34 | 0.04 |      | 0.10 | 0.01 |      | 0.09 | 0.01 |
| v/c Ratio              |      | 0.37 | 0.02 |      | 0.57 | 0.07 |      | 0.36 | 0.04 |      | 0.30 | 0.02 |
| Uniform Delay, d1      |      | 7.2  | 5.7  |      | 8.5  | 5.9  |      | 19.9 | 18.0 |      | 19.5 | 18.0 |
| Progression Factor     |      | 1.00 | 1.00 |      | 0.43 | 0.32 |      | 0.87 | 1.68 |      | 0.89 | 0.82 |
| Incremental Delay, d2  |      | 1.0  | 0.0  |      | 2.1  | 0.1  |      | 2.0  | 0.2  |      | 1.7  | 0.1  |
| Delay (s)              |      | 8.2  | 5.7  |      | 5.7  | 2.0  |      | 19.2 | 30.5 |      | 19.0 | 14.9 |
| Level of Service       |      | A    | A    |      | A    | A    |      | B    | C    |      | B    | B    |
| Approach Delay (s)     |      | 8.1  |      |      | 5.2  |      |      | 22.0 |      |      | 18.3 |      |
| Approach LOS           |      | A    |      |      | A    |      |      | C    |      |      | B    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.1  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.50  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 77.8% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
6483: L Street & 28th Street

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      |      | ↕↕   |      |      | ↕    |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      |      | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor      |      |      |      |      | 0.95 |      |      | 1.00 |      |      | 1.00 |      |
| Frt                    |      |      |      |      | 0.99 |      |      | 1.00 |      |      | 0.98 |      |
| Flt Protected          |      |      |      |      | 1.00 |      |      | 0.99 |      |      | 1.00 |      |
| Satd. Flow (prot)      |      |      |      |      | 3319 |      |      | 1664 |      |      | 1642 |      |
| Flt Permitted          |      |      |      |      | 1.00 |      |      | 0.94 |      |      | 1.00 |      |
| Satd. Flow (perm)      |      |      |      |      | 3319 |      |      | 1584 |      |      | 1642 |      |
| Volume (vph)           | 0    | 0    | 0    | 20   | 476  | 39   | 42   | 243  | 0    | 0    | 143  | 26   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 20   | 476  | 39   | 42   | 243  | 0    | 0    | 143  | 26   |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 8    | 0    | 0    | 0    | 0    | 0    | 10   | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 527  | 0    | 0    | 285  | 0    | 0    | 159  | 0    |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Turn Type              |      |      |      |      | Perm |      |      | Perm |      |      |      |      |
| Protected Phases       |      |      |      |      |      | 6    |      |      | 8    |      |      | 4    |
| Permitted Phases       |      |      |      |      | 6    |      | 8    |      |      |      |      |      |
| Actuated Green, G (s)  |      |      |      |      | 30.0 |      |      | 34.0 |      |      | 34.0 |      |
| Effective Green, g (s) |      |      |      |      | 29.0 |      |      | 33.0 |      |      | 33.0 |      |
| Actuated g/C Ratio     |      |      |      |      | 0.41 |      |      | 0.47 |      |      | 0.47 |      |
| Clearance Time (s)     |      |      |      |      | 3.0  |      |      | 3.0  |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      |      |      |      | 1375 |      |      | 747  |      |      | 774  |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      | 0.10 |      |
| v/s Ratio Perm         |      |      |      |      | 0.16 |      |      | 0.18 |      |      |      |      |
| v/c Ratio              |      |      |      |      | 0.38 |      |      | 0.38 |      |      | 0.21 |      |
| Uniform Delay, d1      |      |      |      |      | 14.3 |      |      | 11.9 |      |      | 10.8 |      |
| Progression Factor     |      |      |      |      | 0.43 |      |      | 0.61 |      |      | 1.90 |      |
| Incremental Delay, d2  |      |      |      |      | 0.8  |      |      | 1.4  |      |      | 0.6  |      |
| Delay (s)              |      |      |      |      | 7.0  |      |      | 8.7  |      |      | 21.1 |      |
| Level of Service       |      |      |      |      | A    |      |      | A    |      |      | C    |      |
| Approach Delay (s)     |      | 0.0  |      |      | 7.0  |      |      | 8.7  |      |      | 21.1 |      |
| Approach LOS           |      | A    |      |      | A    |      |      | A    |      |      | C    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 9.9   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.38  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 49.2% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6484: Capitol & 28th Street

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|-------|------|------|------|------|
| Lane Configurations    |      | ↕    |      | ↙    | ↘     |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      | 4.0  | 4.0   |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00 |      | 1.00 | 1.00  |      |      | 1.00  |      |      | 1.00 |      |
| Fr't                   |      | 0.99 |      | 1.00 | 0.99  |      |      | 0.96  |      |      | 1.00 |      |
| Flt Protected          |      | 1.00 |      | 0.95 | 1.00  |      |      | 0.99  |      |      | 0.99 |      |
| Satd. Flow (prot)      |      | 1666 |      | 1770 | 1654  |      |      | 1597  |      |      | 1648 |      |
| Flt Permitted          |      | 0.99 |      | 0.45 | 1.00  |      |      | 0.96  |      |      | 0.88 |      |
| Satd. Flow (perm)      |      | 1652 |      | 836  | 1654  |      |      | 1539  |      |      | 1466 |      |
| Volume (vph)           | 10   | 432  | 18   | 24   | 434   | 42   | 30   | 151   | 81   | 47   | 128  | 6    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 10   | 432  | 18   | 24   | 434   | 42   | 30   | 151   | 81   | 47   | 128  | 6    |
| RTOR Reduction (vph)   | 0    | 2    | 0    | 0    | 5     | 0    | 0    | 23    | 0    | 0    | 2    | 0    |
| Lane Group Flow (vph)  | 0    | 458  | 0    | 24   | 471   | 0    | 0    | 239   | 0    | 0    | 179  | 0    |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      |      | Perm |       |      | Perm |       |      | Perm |      |      |
| Protected Phases       |      | 4    |      |      | 8     |      |      | 2     |      |      | 6    |      |
| Permitted Phases       | 4    |      |      | 8    |       |      | 2    |       |      | 6    |      |      |
| Actuated Green, G (s)  |      | 38.0 |      | 38.0 | 38.0  |      |      | 26.0  |      |      | 26.0 |      |
| Effective Green, g (s) |      | 37.0 |      | 37.0 | 37.0  |      |      | 25.0  |      |      | 25.0 |      |
| Actuated g/C Ratio     |      | 0.53 |      | 0.53 | 0.53  |      |      | 0.36  |      |      | 0.36 |      |
| Clearance Time (s)     |      | 3.0  |      | 3.0  | 3.0   |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 873  |      | 442  | 874   |      |      | 550   |      |      | 524  |      |
| v/s Ratio Prot         |      |      |      |      | c0.28 |      |      |       |      |      |      |      |
| v/s Ratio Perm         |      | 0.28 |      | 0.03 |       |      |      | c0.16 |      |      | 0.12 |      |
| v/c Ratio              |      | 0.52 |      | 0.05 | 0.54  |      |      | 0.43  |      |      | 0.34 |      |
| Uniform Delay, d1      |      | 10.8 |      | 8.0  | 10.9  |      |      | 17.1  |      |      | 16.5 |      |
| Progression Factor     |      | 1.00 |      | 0.29 | 0.30  |      |      | 0.99  |      |      | 0.39 |      |
| Incremental Delay, d2  |      | 2.3  |      | 0.2  | 2.3   |      |      | 2.4   |      |      | 1.8  |      |
| Delay (s)              |      | 13.0 |      | 2.6  | 5.6   |      |      | 19.3  |      |      | 8.2  |      |
| Level of Service       |      | B    |      | A    | A     |      |      | B     |      |      | A    |      |
| Approach Delay (s)     |      | 13.0 |      |      | 5.5   |      |      | 19.3  |      |      | 8.2  |      |
| Approach LOS           |      | B    |      |      | A     |      |      | B     |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.9  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.50  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 56.8% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6485: N Street & 28th Street

7/11/2005



| Movement                  | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|---------------------------|------|-------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations       |      | ↕↕    |      |      | ↕    |      |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)        | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)       |      | 4.0   |      |      | 4.0  |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor         |      | 0.95  |      |      | 1.00 |      |      | 1.00 |      |      | 1.00  |      |
| Fr <sub>t</sub>           |      | 1.00  |      |      | 0.90 |      |      | 0.96 |      |      | 1.00  |      |
| Fl <sub>t</sub> Protected |      | 0.99  |      |      | 0.99 |      |      | 1.00 |      |      | 0.98  |      |
| Satd. Flow (prot)         |      | 3326  |      |      | 1495 |      |      | 1611 |      |      | 1651  |      |
| Fl <sub>t</sub> Permitted |      | 0.90  |      |      | 0.78 |      |      | 1.00 |      |      | 0.89  |      |
| Satd. Flow (perm)         |      | 2999  |      |      | 1179 |      |      | 1611 |      |      | 1487  |      |
| Volume (vph)              | 102  | 665   | 24   | 32   | 0    | 77   | 0    | 124  | 51   | 44   | 99    | 0    |
| Peak-hour factor, PHF     | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)           | 102  | 665   | 24   | 32   | 0    | 77   | 0    | 124  | 51   | 44   | 99    | 0    |
| RTOR Reduction (vph)      | 0    | 3     | 0    | 0    | 39   | 0    | 0    | 21   | 0    | 0    | 0     | 0    |
| Lane Group Flow (vph)     | 0    | 788   | 0    | 0    | 71   | 0    | 0    | 154  | 0    | 0    | 143   | 0    |
| Parking (#/hr)            | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Turn Type                 | Perm |       |      | Perm |      |      |      | Perm |      |      |       |      |
| Protected Phases          |      | 2     |      |      | 6    |      |      | 8    |      |      | 4     |      |
| Permitted Phases          | 2    |       |      | 6    |      |      |      |      |      | 4    |       |      |
| Actuated Green, G (s)     |      | 36.0  |      |      | 36.0 |      |      | 28.0 |      |      | 28.0  |      |
| Effective Green, g (s)    |      | 35.0  |      |      | 35.0 |      |      | 27.0 |      |      | 27.0  |      |
| Actuated g/C Ratio        |      | 0.50  |      |      | 0.50 |      |      | 0.39 |      |      | 0.39  |      |
| Clearance Time (s)        |      | 3.0   |      |      | 3.0  |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)        |      | 1500  |      |      | 590  |      |      | 621  |      |      | 574   |      |
| v/s Ratio Prot            |      |       |      |      |      |      |      | 0.10 |      |      |       |      |
| v/s Ratio Perm            |      | c0.26 |      |      | 0.06 |      |      |      |      |      | c0.10 |      |
| v/c Ratio                 |      | 0.53  |      |      | 0.12 |      |      | 0.25 |      |      | 0.25  |      |
| Uniform Delay, d1         |      | 11.9  |      |      | 9.3  |      |      | 14.6 |      |      | 14.6  |      |
| Progression Factor        |      | 1.00  |      |      | 3.88 |      |      | 1.00 |      |      | 0.64  |      |
| Incremental Delay, d2     |      | 1.3   |      |      | 0.3  |      |      | 1.0  |      |      | 1.0   |      |
| Delay (s)                 |      | 13.2  |      |      | 36.5 |      |      | 15.6 |      |      | 10.3  |      |
| Level of Service          |      | B     |      |      | D    |      |      | B    |      |      | B     |      |
| Approach Delay (s)        |      | 13.2  |      |      | 36.5 |      |      | 15.6 |      |      | 10.3  |      |
| Approach LOS              |      | B     |      |      | D    |      |      | B    |      |      | B     |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 15.3  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.41  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 59.2% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
6511: K Street & Alhambra

7/11/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|-------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations    |      | ↕     | ↗    |      | ↕    |      |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      | 4.0   | 4.0  |      | 4.0  |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor      |      | 1.00  | 1.00 |      | 1.00 |      |      | 0.95 |      |      | 0.95  |      |
| Frt                    |      | 1.00  | 0.85 |      | 0.99 |      |      | 0.98 |      |      | 0.96  |      |
| Flt Protected          |      | 0.98  | 1.00 |      | 0.99 |      |      | 0.99 |      |      | 1.00  |      |
| Satd. Flow (prot)      |      | 1821  | 1583 |      | 1816 |      |      | 3421 |      |      | 3382  |      |
| Flt Permitted          |      | 0.82  | 1.00 |      | 0.91 |      |      | 0.62 |      |      | 0.95  |      |
| Satd. Flow (perm)      |      | 1533  | 1583 |      | 1671 |      |      | 2131 |      |      | 3212  |      |
| Volume (vph)           | 71   | 83    | 178  | 39   | 97   | 14   | 111  | 345  | 85   | 12   | 765   | 321  |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 71   | 83    | 178  | 39   | 97   | 14   | 111  | 345  | 85   | 12   | 765   | 321  |
| RTOR Reduction (vph)   | 0    | 0     | 113  | 0    | 5    | 0    | 0    | 22   | 0    | 0    | 64    | 0    |
| Lane Group Flow (vph)  | 0    | 154   | 65   | 0    | 145  | 0    | 0    | 519  | 0    | 0    | 1034  | 0    |
| Turn Type              | Perm |       | Perm | Perm |      |      | Perm |      |      | Perm |       |      |
| Protected Phases       |      | 4     |      |      | 8    |      |      | 2    |      |      |       | 6    |
| Permitted Phases       | 4    |       | 4    | 8    |      |      | 2    |      |      | 6    |       |      |
| Actuated Green, G (s)  |      | 25.0  | 25.0 |      | 25.0 |      |      | 39.0 |      |      | 39.0  |      |
| Effective Green, g (s) |      | 24.0  | 24.0 |      | 24.0 |      |      | 38.0 |      |      | 38.0  |      |
| Actuated g/C Ratio     |      | 0.34  | 0.34 |      | 0.34 |      |      | 0.54 |      |      | 0.54  |      |
| Clearance Time (s)     |      | 3.0   | 3.0  |      | 3.0  |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)     |      | 526   | 543  |      | 573  |      |      | 1157 |      |      | 1744  |      |
| v/s Ratio Prot         |      |       |      |      |      |      |      |      |      |      |       |      |
| v/s Ratio Perm         |      | c0.10 | 0.04 |      | 0.09 |      |      | 0.24 |      |      | c0.32 |      |
| v/c Ratio              |      | 0.29  | 0.12 |      | 0.25 |      |      | 0.45 |      |      | 0.59  |      |
| Uniform Delay, d1      |      | 16.8  | 15.8 |      | 16.5 |      |      | 9.7  |      |      | 10.8  |      |
| Progression Factor     |      | 0.76  | 1.39 |      | 1.00 |      |      | 0.29 |      |      | 0.53  |      |
| Incremental Delay, d2  |      | 1.3   | 0.4  |      | 1.1  |      |      | 1.0  |      |      | 1.0   |      |
| Delay (s)              |      | 14.0  | 22.4 |      | 17.6 |      |      | 3.8  |      |      | 6.7   |      |
| Level of Service       |      | B     | C    |      | B    |      |      | A    |      |      | A     |      |
| Approach Delay (s)     |      | 18.5  |      |      | 17.6 |      |      | 3.8  |      |      | 6.7   |      |
| Approach LOS           |      | B     |      |      | B    |      |      | A    |      |      | A     |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 8.6   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.48  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 72.0% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 9622: K Street & 30th Street

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    | ↙    | ↑    |      |      | ↑     | ↗    |      | ↑↑↑  |      |      |      |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0  | 4.0  |      |      | 4.0   | 4.0  |      | 4.0  |      |      |      |      |
| Lane Util. Factor      | 1.00 | 1.00 |      |      | 1.00  | 1.00 |      | 0.91 |      |      |      |      |
| Frt                    | 1.00 | 1.00 |      |      | 1.00  | 0.85 |      | 0.98 |      |      |      |      |
| Flt Protected          | 0.95 | 1.00 |      |      | 1.00  | 1.00 |      | 0.99 |      |      |      |      |
| Satd. Flow (prot)      | 1770 | 1863 |      |      | 1863  | 1583 |      | 4958 |      |      |      |      |
| Flt Permitted          | 0.39 | 1.00 |      |      | 1.00  | 1.00 |      | 0.99 |      |      |      |      |
| Satd. Flow (perm)      | 719  | 1863 |      |      | 1863  | 1583 |      | 4958 |      |      |      |      |
| Volume (vph)           | 92   | 259  | 0    | 0    | 458   | 70   | 203  | 704  | 102  | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 92   | 259  | 0    | 0    | 458   | 70   | 203  | 704  | 102  | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 0     | 35   | 0    | 20   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 92   | 259  | 0    | 0    | 458   | 35   | 0    | 989  | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      |      |      |       | Perm | Perm |      |      |      |      |      |
| Protected Phases       |      | 4    |      |      | 8     |      |      | 2    |      |      |      |      |
| Permitted Phases       | 4    |      |      |      |       | 8    | 2    |      |      |      |      |      |
| Actuated Green, G (s)  | 36.0 | 36.0 |      |      | 36.0  | 36.0 |      | 28.0 |      |      |      |      |
| Effective Green, g (s) | 35.0 | 35.0 |      |      | 35.0  | 35.0 |      | 27.0 |      |      |      |      |
| Actuated g/C Ratio     | 0.50 | 0.50 |      |      | 0.50  | 0.50 |      | 0.39 |      |      |      |      |
| Clearance Time (s)     | 3.0  | 3.0  |      |      | 3.0   | 3.0  |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)     | 360  | 932  |      |      | 932   | 792  |      | 1912 |      |      |      |      |
| v/s Ratio Prot         |      | 0.14 |      |      | c0.25 |      |      |      |      |      |      |      |
| v/s Ratio Perm         | 0.13 |      |      |      |       | 0.02 |      | 0.20 |      |      |      |      |
| v/c Ratio              | 0.26 | 0.28 |      |      | 0.49  | 0.04 |      | 0.52 |      |      |      |      |
| Uniform Delay, d1      | 10.0 | 10.2 |      |      | 11.6  | 8.9  |      | 16.5 |      |      |      |      |
| Progression Factor     | 0.62 | 0.64 |      |      | 0.75  | 0.68 |      | 0.64 |      |      |      |      |
| Incremental Delay, d2  | 1.6  | 0.7  |      |      | 1.6   | 0.1  |      | 0.9  |      |      |      |      |
| Delay (s)              | 7.9  | 7.2  |      |      | 10.4  | 6.2  |      | 11.4 |      |      |      |      |
| Level of Service       | A    | A    |      |      | B     | A    |      | B    |      |      |      |      |
| Approach Delay (s)     |      | 7.4  |      |      | 9.8   |      |      | 11.4 |      |      | 0.0  |      |
| Approach LOS           |      | A    |      |      | A     |      |      | B    |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.2  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.50  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 59.2% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

EXISTING PLUS SUTTER PROJECT WITH SMART PLAN

AM Peak Hour

Signalized Intersections

(am2)



HCM Signalized Intersection Capacity Analysis  
 2004: L Street & 21th Street

6/1/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT  | WBR  | NBL  | NBT                  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|-------|------|------|------|------|----------------------|------|------|------|------|
| Lane Configurations               |      |      |       |      | ↑↑   |      |      | ↑↑↑                  |      |      |      |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      |      |       |      | 4.0  |      |      | 4.0                  |      |      |      |      |
| Lane Util. Factor                 |      |      |       |      | 0.95 |      |      | 0.91                 |      |      |      |      |
| Fr <sub>t</sub>                   |      |      |       |      | 0.97 |      |      | 1.00                 |      |      |      |      |
| Fl <sub>t</sub> Protected         |      |      |       |      | 1.00 |      |      | 0.99                 |      |      |      |      |
| Satd. Flow (prot)                 |      |      |       |      | 3270 |      |      | 4876                 |      |      |      |      |
| Fl <sub>t</sub> Permitted         |      |      |       |      | 1.00 |      |      | 0.99                 |      |      |      |      |
| Satd. Flow (perm)                 |      |      |       |      | 3270 |      |      | 4876                 |      |      |      |      |
| Volume (vph)                      | 0    | 0    | 0     | 0    | 620  | 138  | 194  | 1009                 | 0    | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 0    | 620  | 138  | 194  | 1009                 | 0    | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 0    | 20   | 0    | 0    | 56                   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 0    | 738  | 0    | 0    | 1147                 | 0    | 0    | 0    | 0    |
| Parking (#/hr)                    | 0    | 0    |       |      | 0    | 0    | 0    | 0                    | 0    |      |      |      |
| Turn Type                         |      |      |       |      |      |      | Perm |                      |      |      |      |      |
| Protected Phases                  |      |      |       |      | 6    |      |      | 8                    |      |      |      |      |
| Permitted Phases                  |      |      |       |      |      |      | 8    |                      |      |      |      |      |
| Actuated Green, G (s)             |      |      |       |      | 23.0 |      |      | 21.0                 |      |      |      |      |
| Effective Green, g (s)            |      |      |       |      | 22.0 |      |      | 20.0                 |      |      |      |      |
| Actuated g/C Ratio                |      |      |       |      | 0.44 |      |      | 0.40                 |      |      |      |      |
| Clearance Time (s)                |      |      |       |      | 3.0  |      |      | 3.0                  |      |      |      |      |
| Lane Grp Cap (vph)                |      |      |       |      | 1439 |      |      | 1950                 |      |      |      |      |
| v/s Ratio Prot                    |      |      |       |      | 0.23 |      |      |                      |      |      |      |      |
| v/s Ratio Perm                    |      |      |       |      |      |      |      | 0.24                 |      |      |      |      |
| v/c Ratio                         |      |      |       |      | 0.51 |      |      | 0.59                 |      |      |      |      |
| Uniform Delay, d1                 |      |      |       |      | 10.1 |      |      | 11.8                 |      |      |      |      |
| Progression Factor                |      |      |       |      | 0.15 |      |      | 1.00                 |      |      |      |      |
| Incremental Delay, d2             |      |      |       |      | 1.2  |      |      | 1.3                  |      |      |      |      |
| Delay (s)                         |      |      |       |      | 2.7  |      |      | 13.1                 |      |      |      |      |
| Level of Service                  |      |      |       |      | A    |      |      | B                    |      |      |      |      |
| Approach Delay (s)                |      | 0.0  |       |      | 2.7  |      |      | 13.1                 |      |      | 0.0  |      |
| Approach LOS                      |      | A    |       |      | A    |      |      | B                    |      |      | A    |      |
| <b>Intersection Summary</b>       |      |      |       |      |      |      |      |                      |      |      |      |      |
| HCM Average Control Delay         |      |      | 9.1   |      |      |      |      | HCM Level of Service |      |      | A    |      |
| HCM Volume to Capacity ratio      |      |      | 0.55  |      |      |      |      |                      |      |      |      |      |
| Actuated Cycle Length (s)         |      |      | 50.0  |      |      |      |      | Sum of lost time (s) |      |      | 8.0  |      |
| Intersection Capacity Utilization |      |      | 51.6% |      |      |      |      | ICU Level of Service |      |      | A    |      |
| Analysis Period (min)             |      |      | 15    |      |      |      |      |                      |      |      |      |      |
| c Critical Lane Group             |      |      |       |      |      |      |      |                      |      |      |      |      |

# HCM Signalized Intersection Capacity Analysis

2012: J Street & 21th Street

6/1/2005



| Movement                          | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT                   | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|-------|------|------|------|------|------|-----------------------|------|------|------|------|
| Lane Configurations               |      | ↑↑↑   |      |      |      |      |      | ↑↑↑                   |      |      |      |      |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900                  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0   |      |      |      |      |      | 4.0                   |      |      |      |      |
| Lane Util. Factor                 |      | 0.91  |      |      |      |      |      | 0.91                  |      |      |      |      |
| Fr't                              |      | 1.00  |      |      |      |      |      | 0.97                  |      |      |      |      |
| Flt Protected                     |      | 1.00  |      |      |      |      |      | 1.00                  |      |      |      |      |
| Satd. Flow (prot)                 |      | 4907  |      |      |      |      |      | 4773                  |      |      |      |      |
| Flt Permitted                     |      | 1.00  |      |      |      |      |      | 1.00                  |      |      |      |      |
| Satd. Flow (perm)                 |      | 4907  |      |      |      |      |      | 4773                  |      |      |      |      |
| Volume (vph)                      | 27   | 740   | 0    | 0    | 0    | 0    | 0    | 784                   | 188  | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00                  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 27   | 740   | 0    | 0    | 0    | 0    | 0    | 784                   | 188  | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0    | 8     | 0    | 0    | 0    | 0    | 0    | 53                    | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 0    | 759   | 0    | 0    | 0    | 0    | 0    | 919                   | 0    | 0    | 0    | 0    |
| Parking (#/hr)                    | 0    | 0     |      |      |      |      |      | 0                     | 0    |      |      |      |
| Turn Type                         | Perm |       |      |      |      |      |      |                       |      |      |      |      |
| Protected Phases                  |      | 2     |      |      |      |      |      | 8                     |      |      |      |      |
| Permitted Phases                  | 2    |       |      |      |      |      |      |                       |      |      |      |      |
| Actuated Green, G (s)             |      | 21.0  |      |      |      |      |      | 23.0                  |      |      |      |      |
| Effective Green, g (s)            |      | 20.0  |      |      |      |      |      | 22.0                  |      |      |      |      |
| Actuated g/C Ratio                |      | 0.40  |      |      |      |      |      | 0.44                  |      |      |      |      |
| Clearance Time (s)                |      | 3.0   |      |      |      |      |      | 3.0                   |      |      |      |      |
| Lane Grp Cap (vph)                |      | 1963  |      |      |      |      |      | 2100                  |      |      |      |      |
| v/s Ratio Prot                    |      |       |      |      |      |      |      | c0.19                 |      |      |      |      |
| v/s Ratio Perm                    |      | 0.15  |      |      |      |      |      |                       |      |      |      |      |
| v/c Ratio                         |      | 0.39  |      |      |      |      |      | 0.44                  |      |      |      |      |
| Uniform Delay, d1                 |      | 10.6  |      |      |      |      |      | 9.7                   |      |      |      |      |
| Progression Factor                |      | 0.43  |      |      |      |      |      | 0.21                  |      |      |      |      |
| Incremental Delay, d2             |      | 0.5   |      |      |      |      |      | 0.5                   |      |      |      |      |
| Delay (s)                         |      | 5.1   |      |      |      |      |      | 2.6                   |      |      |      |      |
| Level of Service                  |      | A     |      |      |      |      |      | A                     |      |      |      |      |
| Approach Delay (s)                |      | 5.1   |      |      | 0.0  |      |      | 2.6                   |      |      | 0.0  |      |
| Approach LOS                      |      | A     |      |      | A    |      |      | A                     |      |      | A    |      |
| <b>Intersection Summary</b>       |      |       |      |      |      |      |      |                       |      |      |      |      |
| HCM Average Control Delay         |      | 3.7   |      |      |      |      |      | HCM Level of Service  |      |      | A    |      |
| HCM Volume to Capacity ratio      |      | 0.41  |      |      |      |      |      | Sum of lost time (s)  |      |      | 8.0  |      |
| Actuated Cycle Length (s)         |      | 50.0  |      |      |      |      |      | ICU Level of Service  |      |      | A    |      |
| Intersection Capacity Utilization |      | 40.9% |      |      |      |      |      | Analysis Period (min) |      |      | 15   |      |
| c Critical Lane Group             |      |       |      |      |      |      |      |                       |      |      |      |      |

# HCM Signalized Intersection Capacity Analysis

2074: J Street & 19th Street

6/1/2005



| Movement                          | EBL                 | EBT   | EBR   | WBL  | WBT                  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|---------------------|-------|-------|------|----------------------|------|------|------|------|------|------|------|
| Lane Configurations               |                     | ↑↑↑   |       |      |                      |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)                | 1900                | 1900  | 1900  | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |                     | 4.0   |       |      |                      |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor                 |                     | 0.91  |       |      |                      |      |      |      |      |      | 0.91 |      |
| Frt                               |                     | 0.97  |       |      |                      |      |      |      |      |      | 1.00 |      |
| Flt Protected                     |                     | 1.00  |       |      |                      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (prot)                 |                     | 4782  |       |      |                      |      |      |      |      |      | 4850 |      |
| Flt Permitted                     |                     | 1.00  |       |      |                      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (perm)                 |                     | 4782  |       |      |                      |      |      |      |      |      | 4850 |      |
| Volume (vph)                      | 0                   | 734   | 162   | 0    | 0                    | 0    | 0    | 0    | 0    | 102  | 273  | 0    |
| Peak-hour factor, PHF             | 1.00                | 1.00  | 1.00  | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0                   | 734   | 162   | 0    | 0                    | 0    | 0    | 0    | 0    | 102  | 273  | 0    |
| RTOR Reduction (vph)              | 0                   | 70    | 0     | 0    | 0                    | 0    | 0    | 0    | 0    | 0    | 61   | 0    |
| Lane Group Flow (vph)             | 0                   | 826   | 0     | 0    | 0                    | 0    | 0    | 0    | 0    | 0    | 314  | 0    |
| Parking (#/hr)                    |                     | 0     | 0     |      |                      |      |      |      |      | 0    | 0    |      |
| Turn Type                         |                     |       |       |      |                      |      |      |      |      | Perm |      |      |
| Protected Phases                  |                     | 2     |       |      |                      |      |      |      |      |      | 4    |      |
| Permitted Phases                  |                     |       |       |      |                      |      |      |      |      | 4    |      |      |
| Actuated Green, G (s)             |                     | 23.0  |       |      |                      |      |      |      |      |      | 21.0 |      |
| Effective Green, g (s)            |                     | 22.0  |       |      |                      |      |      |      |      |      | 20.0 |      |
| Actuated g/C Ratio                |                     | 0.44  |       |      |                      |      |      |      |      |      | 0.40 |      |
| Clearance Time (s)                |                     | 3.0   |       |      |                      |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |                     | 2104  |       |      |                      |      |      |      |      |      | 1940 |      |
| v/s Ratio Prot                    |                     | c0.17 |       |      |                      |      |      |      |      |      |      |      |
| v/s Ratio Perm                    |                     |       |       |      |                      |      |      |      |      |      | 0.06 |      |
| v/c Ratio                         |                     | 0.39  |       |      |                      |      |      |      |      |      | 0.16 |      |
| Uniform Delay, d1                 |                     | 9.5   |       |      |                      |      |      |      |      |      | 9.6  |      |
| Progression Factor                |                     | 1.00  |       |      |                      |      |      |      |      |      | 1.00 |      |
| Incremental Delay, d2             |                     | 0.6   |       |      |                      |      |      |      |      |      | 0.2  |      |
| Delay (s)                         |                     | 10.0  |       |      |                      |      |      |      |      |      | 9.8  |      |
| Level of Service                  |                     | B     |       |      |                      |      |      |      |      |      | A    |      |
| Approach Delay (s)                |                     | 10.0  |       |      | 0.0                  |      |      | 0.0  |      |      | 9.8  |      |
| Approach LOS                      |                     | B     |       |      | A                    |      |      | A    |      |      | A    |      |
| <b>Intersection Summary</b>       |                     |       |       |      |                      |      |      |      |      |      |      |      |
| HCM Average Control Delay         |                     |       | 10.0  |      | HCM Level of Service |      |      |      |      |      | A    |      |
| HCM Volume to Capacity ratio      |                     |       | 0.28  |      |                      |      |      |      |      |      |      |      |
| Actuated Cycle Length (s)         |                     |       | 50.0  |      | Sum of lost time (s) |      |      |      |      | 8.0  |      |      |
| Intersection Capacity Utilization |                     |       | 31.8% |      | ICU Level of Service |      |      |      |      | A    |      |      |
| Analysis Period (min)             |                     |       | 15    |      |                      |      |      |      |      |      |      |      |
| c                                 | Critical Lane Group |       |       |      |                      |      |      |      |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
 2088: L Street & 29th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|-------|------|
| Lane Configurations    |      |      |      | ↙    | ↑↑    |      |      |      |      |      | ↑↑↑   | ↗    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      |      |      | 4.0  | 4.0   |      |      |      |      |      | 4.0   | 4.0  |
| Lane Util. Factor      |      |      |      | 1.00 | 0.95  |      |      |      |      |      | 0.86  | 0.86 |
| Fr <sub>t</sub>        |      |      |      | 1.00 | 1.00  |      |      |      |      |      | 1.00  | 0.85 |
| Flt Protected          |      |      |      | 0.95 | 1.00  |      |      |      |      |      | 1.00  | 1.00 |
| Satd. Flow (prot)      |      |      |      | 1770 | 3539  |      |      |      |      |      | 4646  | 1226 |
| Flt Permitted          |      |      |      | 0.95 | 1.00  |      |      |      |      |      | 1.00  | 1.00 |
| Satd. Flow (perm)      |      |      |      | 1770 | 3539  |      |      |      |      |      | 4646  | 1226 |
| Volume (vph)           | 0    | 0    | 0    | 156  | 583   | 0    | 0    | 0    | 0    | 0    | 913   | 193  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 156  | 583   | 0    | 0    | 0    | 0    | 0    | 913   | 193  |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 43   | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 99   |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 113  | 583   | 0    | 0    | 0    | 0    | 0    | 913   | 94   |
| Parking (#/hr)         |      |      | 0    |      |       |      |      |      |      |      | 0     | 0    |
| Turn Type              |      |      |      | Perm |       |      |      |      |      |      |       | Perm |
| Protected Phases       |      |      |      |      | 6     |      |      |      |      |      |       | 4    |
| Permitted Phases       |      |      |      | 6    |       |      |      |      |      |      |       | 4    |
| Actuated Green, G (s)  |      |      |      | 31.0 | 31.0  |      |      |      |      |      | 33.0  | 33.0 |
| Effective Green, g (s) |      |      |      | 30.0 | 30.0  |      |      |      |      |      | 32.0  | 32.0 |
| Actuated g/C Ratio     |      |      |      | 0.43 | 0.43  |      |      |      |      |      | 0.46  | 0.46 |
| Clearance Time (s)     |      |      |      | 3.0  | 3.0   |      |      |      |      |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)     |      |      |      | 759  | 1517  |      |      |      |      |      | 2124  | 560  |
| v/s Ratio Prot         |      |      |      |      | c0.16 |      |      |      |      |      | c0.20 |      |
| v/s Ratio Perm         |      |      |      | 0.06 |       |      |      |      |      |      |       | 0.08 |
| v/c Ratio              |      |      |      | 0.15 | 0.38  |      |      |      |      |      | 0.43  | 0.17 |
| Uniform Delay, d1      |      |      |      | 12.2 | 13.7  |      |      |      |      |      | 12.8  | 11.2 |
| Progression Factor     |      |      |      | 0.25 | 0.42  |      |      |      |      |      | 0.69  | 0.73 |
| Incremental Delay, d2  |      |      |      | 0.4  | 0.7   |      |      |      |      |      | 0.6   | 0.5  |
| Delay (s)              |      |      |      | 3.5  | 6.5   |      |      |      |      |      | 9.4   | 8.7  |
| Level of Service       |      |      |      | A    | A     |      |      |      |      |      | A     | A    |
| Approach Delay (s)     |      | 0.0  |      |      | 5.8   |      |      | 0.0  |      |      | 9.3   |      |
| Approach LOS           |      | A    |      |      | A     |      |      | A    |      |      | A     |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 7.9   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.41  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 41.9% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
 2239: L Street & Alhambra

6/1/2005



| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations       |      |      |      |      | ↕    |      |      | ↕    |      |      | ↕    | ↕    |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |      |      |      |      | 4.0  |      |      | 4.0  |      |      | 4.0  | 4.0  |
| Lane Util. Factor         |      |      |      |      | 1.00 |      |      | 1.00 |      |      | 1.00 | 1.00 |
| Fr <sub>t</sub>           |      |      |      |      | 0.98 |      |      | 0.98 |      |      | 1.00 | 0.85 |
| Fl <sub>t</sub> Protected |      |      |      |      | 1.00 |      |      | 1.00 |      |      | 0.99 | 1.00 |
| Satd. Flow (prot)         |      |      |      |      | 1638 |      |      | 1629 |      |      | 1851 | 1425 |
| Fl <sub>t</sub> Permitted |      |      |      |      | 1.00 |      |      | 0.93 |      |      | 0.89 | 1.00 |
| Satd. Flow (perm)         |      |      |      |      | 1638 |      |      | 1514 |      |      | 1650 | 1425 |
| Volume (vph)              | 0    | 0    | 0    | 10   | 88   | 16   | 50   | 409  | 100  | 71   | 487  | 374  |
| Peak-hour factor, PHF     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 0    | 0    | 0    | 10   | 88   | 16   | 50   | 409  | 100  | 71   | 487  | 374  |
| RTOR Reduction (vph)      | 0    | 0    | 0    | 0    | 9    | 0    | 0    | 11   | 0    | 0    | 0    | 150  |
| Lane Group Flow (vph)     | 0    | 0    | 0    | 0    | 105  | 0    | 0    | 548  | 0    | 0    | 558  | 224  |
| Parking (#/hr)            |      |      |      | 0    | 0    | 0    | 0    | 0    | 0    |      |      | 0    |
| Turn Type                 |      |      |      |      | Perm |      |      | Perm |      |      | Perm | Perm |
| Protected Phases          |      |      |      |      |      | 6    |      |      | 8    |      |      | 4    |
| Permitted Phases          |      |      |      |      | 6    |      |      | 8    |      |      | 4    | 4    |
| Actuated Green, G (s)     |      |      |      |      | 21.0 |      |      | 43.0 |      |      | 43.0 | 43.0 |
| Effective Green, g (s)    |      |      |      |      | 20.0 |      |      | 42.0 |      |      | 42.0 | 42.0 |
| Actuated g/C Ratio        |      |      |      |      | 0.29 |      |      | 0.60 |      |      | 0.60 | 0.60 |
| Clearance Time (s)        |      |      |      |      | 3.0  |      |      | 3.0  |      |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)        |      |      |      |      | 468  |      |      | 908  |      |      | 990  | 855  |
| v/s Ratio Prot            |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm            |      |      |      |      | 0.06 |      |      | 0.36 |      |      | 0.34 | 0.16 |
| v/c Ratio                 |      |      |      |      | 0.23 |      |      | 0.60 |      |      | 0.56 | 0.26 |
| Uniform Delay, d1         |      |      |      |      | 19.1 |      |      | 8.8  |      |      | 8.5  | 6.6  |
| Progression Factor        |      |      |      |      | 1.00 |      |      | 0.33 |      |      | 1.68 | 7.14 |
| Incremental Delay, d2     |      |      |      |      | 1.1  |      |      | 2.0  |      |      | 2.0  | 0.6  |
| Delay (s)                 |      |      |      |      | 20.2 |      |      | 4.9  |      |      | 16.2 | 48.1 |
| Level of Service          |      |      |      |      | C    |      |      | A    |      |      | B    | D    |
| Approach Delay (s)        |      | 0.0  |      |      | 20.2 |      |      | 4.9  |      |      | 29.0 |      |
| Approach LOS              |      | A    |      |      | C    |      |      | A    |      |      | C    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 20.0  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.48  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 76.1% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3426: L Street & 19th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations    |      |      |      |      | ↕↕   |      |      |      |      |      | ↕↕↕   |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      |      |      |      |      | 4.0   |      |
| Lane Util. Factor      |      |      |      |      | 0.95 |      |      |      |      |      | 0.91  |      |
| Flt                    |      |      |      |      | 1.00 |      |      |      |      |      | 0.99  |      |
| Flt Protected          |      |      |      |      | 1.00 |      |      |      |      |      | 1.00  |      |
| Satd. Flow (prot)      |      |      |      |      | 3346 |      |      |      |      |      | 4844  |      |
| Flt Permitted          |      |      |      |      | 1.00 |      |      |      |      |      | 1.00  |      |
| Satd. Flow (perm)      |      |      |      |      | 3346 |      |      |      |      |      | 4844  |      |
| Volume (vph)           | 0    | 0    | 0    | 78   | 714  | 0    | 0    | 0    | 0    | 0    | 380   | 41   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 78   | 714  | 0    | 0    | 0    | 0    | 0    | 380   | 41   |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 17   | 0    | 0    | 0    | 0    | 0    | 25    | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 775  | 0    | 0    | 0    | 0    | 0    | 396   | 0    |
| Parking (#/hr)         |      | 0    | 0    | 0    | 0    |      |      |      |      | 0    | 0     | 0    |
| Turn Type              |      |      |      |      | Perm |      |      |      |      |      |       |      |
| Protected Phases       |      |      |      |      | 6    |      |      |      |      |      | 4     |      |
| Permitted Phases       |      |      |      | 6    |      |      |      |      |      |      |       |      |
| Actuated Green, G (s)  |      |      |      |      | 24.0 |      |      |      |      |      | 20.0  |      |
| Effective Green, g (s) |      |      |      |      | 23.0 |      |      |      |      |      | 19.0  |      |
| Actuated g/C Ratio     |      |      |      |      | 0.46 |      |      |      |      |      | 0.38  |      |
| Clearance Time (s)     |      |      |      |      | 3.0  |      |      |      |      |      | 3.0   |      |
| Lane Grp Cap (vph)     |      |      |      |      | 1539 |      |      |      |      |      | 1841  |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      | c0.08 |      |
| v/s Ratio Perm         |      |      |      |      | 0.23 |      |      |      |      |      |       |      |
| v/c Ratio              |      |      |      |      | 0.50 |      |      |      |      |      | 0.21  |      |
| Uniform Delay, d1      |      |      |      |      | 9.5  |      |      |      |      |      | 10.5  |      |
| Progression Factor     |      |      |      |      | 0.48 |      |      |      |      |      | 0.84  |      |
| Incremental Delay, d2  |      |      |      |      | 1.0  |      |      |      |      |      | 0.3   |      |
| Delay (s)              |      |      |      |      | 5.5  |      |      |      |      |      | 9.0   |      |
| Level of Service       |      |      |      |      | A    |      |      |      |      |      | A     |      |
| Approach Delay (s)     |      | 0.0  |      |      | 5.5  |      |      | 0.0  |      |      | 9.0   |      |
| Approach LOS           |      | A    |      |      | A    |      |      | A    |      |      | A     |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 6.7   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.37  |                      |     |
| Actuated Cycle Length (s)         | 50.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 36.9% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

# HCM Signalized Intersection Capacity Analysis

3427: L Street & 26th St

6/1/2005



| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|---------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations       |      |      |      |      | ↕    |      |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)       |      |      |      |      | 4.0  |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor         |      |      |      |      | 0.95 |      |      | 1.00 |      |      | 1.00  |      |
| Fr <sub>t</sub>           |      |      |      |      | 0.99 |      |      | 1.00 |      |      | 0.95  |      |
| Fl <sub>t</sub> Protected |      |      |      |      | 1.00 |      |      | 0.98 |      |      | 1.00  |      |
| Satd. Flow (prot)         |      |      |      |      | 3328 |      |      | 1649 |      |      | 1590  |      |
| Fl <sub>t</sub> Permitted |      |      |      |      | 1.00 |      |      | 0.93 |      |      | 1.00  |      |
| Satd. Flow (perm)         |      |      |      |      | 3328 |      |      | 1557 |      |      | 1590  |      |
| Volume (vph)              | 0    | 0    | 0    | 14   | 744  | 51   | 19   | 37   | 0    | 0    | 53    | 33   |
| Peak-hour factor, PHF     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)           | 0    | 0    | 0    | 14   | 744  | 51   | 19   | 37   | 0    | 0    | 53    | 33   |
| RTOR Reduction (vph)      | 0    | 0    | 0    | 0    | 10   | 0    | 0    | 0    | 0    | 0    | 20    | 0    |
| Lane Group Flow (vph)     | 0    | 0    | 0    | 0    | 799  | 0    | 0    | 56   | 0    | 0    | 66    | 0    |
| Parking (#/hr)            |      |      |      | 0    | 0    | 0    | 0    | 0    |      |      | 0     | 0    |
| Turn Type                 |      |      |      | Perm |      | Perm |      |      |      |      |       |      |
| Protected Phases          |      |      |      |      | 8    |      |      | 2    |      |      | 6     |      |
| Permitted Phases          |      |      |      | 8    |      |      | 2    |      |      |      |       |      |
| Actuated Green, G (s)     |      |      |      |      | 24.0 |      |      | 20.0 |      |      | 20.0  |      |
| Effective Green, g (s)    |      |      |      |      | 23.0 |      |      | 19.0 |      |      | 19.0  |      |
| Actuated g/C Ratio        |      |      |      |      | 0.46 |      |      | 0.38 |      |      | 0.38  |      |
| Clearance Time (s)        |      |      |      |      | 3.0  |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)        |      |      |      |      | 1531 |      |      | 592  |      |      | 604   |      |
| v/s Ratio Prot            |      |      |      |      |      |      |      |      |      |      | c0.04 |      |
| v/s Ratio Perm            |      |      |      |      | 0.24 |      |      | 0.04 |      |      |       |      |
| v/c Ratio                 |      |      |      |      | 0.52 |      |      | 0.09 |      |      | 0.11  |      |
| Uniform Delay, d1         |      |      |      |      | 9.6  |      |      | 10.0 |      |      | 10.0  |      |
| Progression Factor        |      |      |      |      | 1.00 |      |      | 0.73 |      |      | 1.00  |      |
| Incremental Delay, d2     |      |      |      |      | 1.3  |      |      | 0.3  |      |      | 0.4   |      |
| Delay (s)                 |      |      |      |      | 10.9 |      |      | 7.6  |      |      | 10.4  |      |
| Level of Service          |      |      |      |      | B    |      |      | A    |      |      | B     |      |
| Approach Delay (s)        |      | 0.0  |      |      | 10.9 |      |      | 7.6  |      |      | 10.4  |      |
| Approach LOS              |      | A    |      |      | B    |      |      | A    |      |      | B     |      |

## Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.6  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.33  |                      |     |
| Actuated Cycle Length (s)         | 50.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 38.9% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3428: J Street & 29th St off ramp

6/1/2005



| Movement               | EBT   | EBR  | SBL   | SBT   | SWL2 | SWL  |
|------------------------|-------|------|-------|-------|------|------|
| Lane Configurations    | ↑↑↑   |      |       | ↑↑↑   |      | ↑↑   |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900  | 1900  | 1900 | 1900 |
| Total Lost time (s)    | 4.0   |      |       | 4.0   |      | 4.0  |
| Lane Util. Factor      | 0.91  |      |       | 0.91  |      | 0.97 |
| Frt                    | 0.96  |      |       | 1.00  |      | 1.00 |
| Flt Protected          | 1.00  |      |       | 1.00  |      | 0.95 |
| Satd. Flow (prot)      | 4736  |      |       | 4894  |      | 3433 |
| Flt Permitted          | 1.00  |      |       | 1.00  |      | 0.95 |
| Satd. Flow (perm)      | 4736  |      |       | 4894  |      | 3433 |
| Volume (vph)           | 712   | 229  | 34    | 345   | 388  | 684  |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 712   | 229  | 34    | 345   | 388  | 684  |
| RTOR Reduction (vph)   | 79    | 0    | 0     | 0     | 0    | 121  |
| Lane Group Flow (vph)  | 862   | 0    | 0     | 379   | 0    | 951  |
| Parking (#/hr)         | 0     | 0    |       | 0     |      |      |
| Turn Type              |       |      | Split |       | Perm |      |
| Protected Phases       | 2     |      | 8     | 8     |      | 4    |
| Permitted Phases       |       |      |       |       | 4    |      |
| Actuated Green, G (s)  | 19.0  |      |       | 17.0  |      | 25.0 |
| Effective Green, g (s) | 18.0  |      |       | 16.0  |      | 24.0 |
| Actuated g/C Ratio     | 0.26  |      |       | 0.23  |      | 0.34 |
| Clearance Time (s)     | 3.0   |      |       | 3.0   |      | 3.0  |
| Lane Grp Cap (vph)     | 1218  |      |       | 1119  |      | 1177 |
| v/s Ratio Prot         | c0.18 |      |       | c0.08 |      |      |
| v/s Ratio Perm         |       |      |       |       |      | 0.28 |
| v/c Ratio              | 0.71  |      |       | 0.34  |      | 0.81 |
| Uniform Delay, d1      | 23.6  |      |       | 22.6  |      | 20.9 |
| Progression Factor     | 0.53  |      |       | 1.00  |      | 1.00 |
| Incremental Delay, d2  | 3.3   |      |       | 0.8   |      | 6.0  |
| Delay (s)              | 15.7  |      |       | 23.4  |      | 26.9 |
| Level of Service       | B     |      |       | C     |      | C    |
| Approach Delay (s)     | 15.7  |      |       | 23.4  |      | 26.9 |
| Approach LOS           | B     |      |       | C     |      | C    |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 22.0  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.65  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 66.8% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3429: J Street & Alhambra

6/1/2005



| Movement                  | EBL   | EBT   | EBR  | WBL   | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|---------------------------|-------|-------|------|-------|------|------|------|------|------|------|-------|------|
| Lane Configurations       | ↖     | ↕     |      | ↖     | ↕    | ↗    |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)        | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)       | 4.0   | 4.0   |      | 4.0   | 4.0  | 4.0  |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor         | 1.00  | 0.95  |      | 0.95  | 0.95 | 1.00 |      | 0.95 |      |      | 0.95  |      |
| Fr <sub>t</sub>           | 1.00  | 0.96  |      | 1.00  | 1.00 | 0.85 |      | 0.95 |      |      | 1.00  |      |
| Fl <sub>t</sub> Protected | 0.95  | 1.00  |      | 0.95  | 0.95 | 1.00 |      | 1.00 |      |      | 0.99  |      |
| Satd. Flow (prot)         | 1770  | 3215  |      | 1681  | 1681 | 1425 |      | 3207 |      |      | 3322  |      |
| Fl <sub>t</sub> Permitted | 0.95  | 1.00  |      | 0.95  | 0.95 | 1.00 |      | 1.00 |      |      | 0.75  |      |
| Satd. Flow (perm)         | 1770  | 3215  |      | 1681  | 1681 | 1425 |      | 3207 |      |      | 2531  |      |
| Volume (vph)              | 151   | 552   | 228  | 540   | 0    | 150  | 0    | 241  | 107  | 101  | 321   | 0    |
| Peak-hour factor, PHF     | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)           | 151   | 552   | 228  | 540   | 0    | 150  | 0    | 241  | 107  | 101  | 321   | 0    |
| RTOR Reduction (vph)      | 0     | 64    | 0    | 0     | 0    | 111  | 0    | 72   | 0    | 0    | 0     | 0    |
| Lane Group Flow (vph)     | 151   | 716   | 0    | 270   | 270  | 39   | 0    | 276  | 0    | 0    | 422   | 0    |
| Parking (#/hr)            |       | 0     | 0    |       |      | 0    |      | 0    | 0    |      | 0     |      |
| Turn Type                 | Split |       |      | Split |      |      | Perm |      |      |      | Perm  |      |
| Protected Phases          | 2     | 2     |      | 6     | 6    |      | 8    |      |      |      | 4     |      |
| Permitted Phases          |       |       |      |       |      | 6    |      |      |      | 4    |       |      |
| Actuated Green, G (s)     | 23.0  | 23.0  |      | 19.0  | 19.0 | 19.0 |      | 19.0 |      |      | 19.0  |      |
| Effective Green, g (s)    | 22.0  | 22.0  |      | 18.0  | 18.0 | 18.0 |      | 18.0 |      |      | 18.0  |      |
| Actuated g/C Ratio        | 0.31  | 0.31  |      | 0.26  | 0.26 | 0.26 |      | 0.26 |      |      | 0.26  |      |
| Clearance Time (s)        | 3.0   | 3.0   |      | 3.0   | 3.0  | 3.0  |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)        | 556   | 1010  |      | 432   | 432  | 366  |      | 825  |      |      | 651   |      |
| v/s Ratio Prot            | 0.09  | c0.22 |      | c0.16 | 0.16 |      |      | 0.09 |      |      |       |      |
| v/s Ratio Perm            |       |       |      |       |      | 0.03 |      |      |      |      | c0.17 |      |
| v/c Ratio                 | 0.27  | 0.71  |      | 0.62  | 0.62 | 0.11 |      | 0.33 |      |      | 0.65  |      |
| Uniform Delay, d1         | 18.0  | 21.2  |      | 23.0  | 23.0 | 19.9 |      | 21.1 |      |      | 23.2  |      |
| Progression Factor        | 0.57  | 0.59  |      | 1.00  | 1.00 | 1.00 |      | 0.47 |      |      | 1.00  |      |
| Incremental Delay, d2     | 1.1   | 4.0   |      | 6.7   | 6.7  | 0.6  |      | 1.0  |      |      | 4.9   |      |
| Delay (s)                 | 11.4  | 16.6  |      | 29.7  | 29.7 | 20.4 |      | 11.0 |      |      | 28.1  |      |
| Level of Service          | B     | B     |      | C     | C    | C    |      | B    |      |      | C     |      |
| Approach Delay (s)        |       | 15.7  |      |       | 27.7 |      |      | 11.0 |      |      | 28.1  |      |
| Approach LOS              |       | B     |      |       | C    |      |      | B    |      |      | C     |      |

**Intersection Summary**

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 20.7  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.66  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 72.7% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3435: N Street & 29th Street

6/1/2005



| Movement               | EBT  | EBR   | EBR2 | WBL2  | WBL   | WBT   | SBL2 | SBL   | SBT  | SBR  |
|------------------------|------|-------|------|-------|-------|-------|------|-------|------|------|
| Lane Configurations    | ↑    | ↔     |      |       | ↔     | ↑     |      | ↔     | ↑↔   |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900  | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    | 4.0  | 4.0   |      |       | 4.0   | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor      | 1.00 | 1.00  |      |       | 0.95  | 0.95  |      | 0.97  | 0.95 |      |
| Frnt                   | 1.00 | 0.85  |      |       | 1.00  | 1.00  |      | 1.00  | 1.00 |      |
| Flt Protected          | 1.00 | 1.00  |      |       | 0.95  | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)      | 1676 | 1425  |      |       | 1681  | 1762  |      | 3433  | 3348 |      |
| Flt Permitted          | 1.00 | 1.00  |      |       | 0.95  | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)      | 1676 | 1425  |      |       | 1681  | 1762  |      | 3433  | 3348 |      |
| Volume (vph)           | 209  | 208   | 36   | 156   | 106   | 233   | 25   | 528   | 305  | 9    |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 209  | 208   | 36   | 156   | 106   | 233   | 25   | 528   | 305  | 9    |
| RTOR Reduction (vph)   | 0    | 9     | 0    | 0     | 0     | 0     | 0    | 0     | 3    | 0    |
| Lane Group Flow (vph)  | 209  | 235   | 0    | 0     | 241   | 254   | 0    | 553   | 311  | 0    |
| Parking (#/hr)         | 0    | 0     | 0    |       |       |       |      |       | 0    |      |
| Turn Type              |      | Perm  |      | Split | Split |       | Perm | Perm  |      |      |
| Protected Phases       | 4    |       |      | 8     | 8     | 8     |      |       | 6    |      |
| Permitted Phases       |      | 4     |      |       |       |       | 6    | 6     |      |      |
| Actuated Green, G (s)  | 22.0 | 22.0  |      |       | 19.0  | 19.0  |      | 20.0  | 20.0 |      |
| Effective Green, g (s) | 21.0 | 21.0  |      |       | 18.0  | 18.0  |      | 19.0  | 19.0 |      |
| Actuated g/C Ratio     | 0.30 | 0.30  |      |       | 0.26  | 0.26  |      | 0.27  | 0.27 |      |
| Clearance Time (s)     | 3.0  | 3.0   |      |       | 3.0   | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     | 503  | 428   |      |       | 432   | 453   |      | 932   | 909  |      |
| v/s Ratio Prot         | 0.12 |       |      |       | 0.14  | c0.14 |      |       | 0.09 |      |
| v/s Ratio Perm         |      | c0.16 |      |       |       |       |      | c0.16 |      |      |
| v/c Ratio              | 0.42 | 0.55  |      |       | 0.56  | 0.56  |      | 0.59  | 0.34 |      |
| Uniform Delay, d1      | 19.6 | 20.5  |      |       | 22.5  | 22.6  |      | 22.1  | 20.5 |      |
| Progression Factor     | 0.90 | 0.90  |      |       | 0.71  | 0.88  |      | 0.99  | 0.98 |      |
| Incremental Delay, d2  | 2.5  | 4.9   |      |       | 3.9   | 3.2   |      | 2.5   | 0.9  |      |
| Delay (s)              | 20.0 | 23.3  |      |       | 19.9  | 23.1  |      | 24.5  | 20.9 |      |
| Level of Service       | C    | C     |      |       | B     | C     |      | C     | C    |      |
| Approach Delay (s)     | 21.8 |       |      |       |       | 21.6  |      |       | 23.2 |      |
| Approach LOS           | C    |       |      |       |       | C     |      |       | C    |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 22.4  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.57  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 54.3% | ICU Level of Service | A    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3436: Capitol & Alhambra

6/1/2005



| Movement                  | EBL   | EBT  | EBR   | WBL  | WBT  | WBR  | NBL  | NBT  | NBR   | SBL  | SBT  | SBR  |      |
|---------------------------|-------|------|-------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations       |       | ↔    |       |      | ↔    |      | ↗    | ↖    | ↗     | ↖    | ↖    | ↗    |      |
| Ideal Flow (vphpl)        | 1900  | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 |      |
| Total Lost time (s)       |       | 4.0  |       |      | 4.0  |      | 4.0  | 4.0  | 4.0   | 4.0  | 4.0  | 4.0  |      |
| Lane Util. Factor         |       | 0.95 |       |      | 0.95 |      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 |      |
| Fr <sub>t</sub>           |       | 0.98 |       |      | 0.98 |      | 1.00 | 1.00 | 0.85  | 1.00 | 1.00 | 0.85 |      |
| Fl <sub>t</sub> Protected |       | 0.99 |       |      | 1.00 |      | 0.95 | 1.00 | 1.00  | 0.95 | 1.00 | 1.00 |      |
| Satd. Flow (prot)         |       | 3264 |       |      | 3287 |      | 1593 | 1676 | 1425  | 1593 | 1676 | 1425 |      |
| Fl <sub>t</sub> Permitted |       | 0.99 |       |      | 1.00 |      | 0.36 | 1.00 | 1.00  | 0.28 | 1.00 | 1.00 |      |
| Satd. Flow (perm)         |       | 3264 |       |      | 3287 |      | 598  | 1676 | 1425  | 470  | 1676 | 1425 |      |
| Volume (vph)              | 55    | 242  | 50    | 29   | 562  | 93   | 52   | 451  | 104   | 94   | 386  | 52   |      |
| Peak-hour factor, PHF     | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 |      |
| Adj. Flow (vph)           | 55    | 242  | 50    | 29   | 562  | 93   | 52   | 451  | 104   | 94   | 386  | 52   |      |
| RTOR Reduction (vph)      | 0     | 19   | 0     | 0    | 18   | 0    | 0    | 0    | 59    | 0    | 0    | 33   |      |
| Lane Group Flow (vph)     | 0     | 328  | 0     | 0    | 666  | 0    | 52   | 451  | 45    | 94   | 386  | 19   |      |
| Parking (#/hr)            | 0     | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    |      |
| Turn Type                 | Split |      | Split |      |      |      | Perm |      | Perm  | Perm | Perm |      |      |
| Protected Phases          | 4     | 4    | 8     |      | 8    |      |      | 2    |       | 6    |      |      |      |
| Permitted Phases          |       |      |       |      |      |      | 2    |      | 2     | 6    | 6    |      |      |
| Actuated Green, G (s)     | 17.0  |      | 18.0  |      |      |      | 26.0 |      | 26.0  | 26.0 | 26.0 |      |      |
| Effective Green, g (s)    | 16.0  |      | 17.0  |      |      |      | 25.0 |      | 25.0  | 25.0 | 25.0 |      |      |
| Actuated g/C Ratio        | 0.23  |      | 0.24  |      |      |      | 0.36 |      | 0.36  | 0.36 | 0.36 |      |      |
| Clearance Time (s)        | 3.0   |      | 3.0   |      |      |      | 3.0  |      | 3.0   | 3.0  | 3.0  |      |      |
| Lane Grp Cap (vph)        | 746   |      | 798   |      |      |      | 214  |      | 599   | 509  | 168  | 599  | 509  |
| v/s Ratio Prot            | c0.10 |      | c0.20 |      |      |      |      |      | c0.27 |      | 0.23 |      |      |
| v/s Ratio Perm            |       |      |       |      |      |      | 0.09 |      | 0.03  | 0.20 | 0.01 |      |      |
| v/c Ratio                 | 0.44  |      | 0.83  |      |      |      | 0.24 |      | 0.75  | 0.09 | 0.56 | 0.64 | 0.04 |
| Uniform Delay, d1         | 23.2  |      | 25.2  |      |      |      | 15.8 |      | 19.8  | 14.9 | 18.1 | 18.8 | 14.7 |
| Progression Factor        | 1.09  |      | 1.00  |      |      |      | 1.06 |      | 0.97  | 1.35 | 0.58 | 0.57 | 0.52 |
| Incremental Delay, d2     | 1.8   |      | 10.0  |      |      |      | 1.8  |      | 5.7   | 0.2  | 11.1 | 4.6  | 0.1  |
| Delay (s)                 | 27.1  |      | 35.2  |      |      |      | 18.5 |      | 24.9  | 20.3 | 21.6 | 15.3 | 7.7  |
| Level of Service          | C     |      | D     |      |      |      | B    |      | C     | C    | C    | B    | A    |
| Approach Delay (s)        | 27.1  |      | 35.2  |      |      |      |      |      | 23.6  |      | 15.6 |      |      |
| Approach LOS              | C     |      | D     |      |      |      |      |      | C     |      | B    |      |      |

**Intersection Summary**

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 25.9  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.69  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 71.5% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3437: P Street & 29th St off ramp

6/1/2005



| Movement                          | WBL  | WBT   | SBT   | SBR  | SWL   | SWR  |
|-----------------------------------|------|-------|-------|------|-------|------|
| Lane Configurations               | ↵    | ↑↑    | ↑↑↑   |      | ↵↵    | ↵    |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900  | 1900 | 1900  | 1900 |
| Total Lost time (s)               | 4.0  | 4.0   | 4.0   |      | 4.0   | 4.0  |
| Lane Util. Factor                 | 1.00 | 0.95  | 0.91  |      | 0.97  | 0.91 |
| Fr <sub>t</sub>                   | 1.00 | 1.00  | 0.96  |      | 0.98  | 0.85 |
| Flt Protected                     | 0.95 | 1.00  | 1.00  |      | 0.96  | 1.00 |
| Satd. Flow (prot)                 | 1593 | 3362  | 4721  |      | 3391  | 1441 |
| Flt Permitted                     | 0.95 | 1.00  | 1.00  |      | 0.96  | 1.00 |
| Satd. Flow (perm)                 | 1593 | 3362  | 4721  |      | 3391  | 1441 |
| Volume (vph)                      | 83   | 624   | 312   | 112  | 582   | 380  |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)                   | 83   | 624   | 312   | 112  | 582   | 380  |
| RTOR Reduction (vph)              | 60   | 0     | 85    | 0    | 0     | 0    |
| Lane Group Flow (vph)             | 23   | 624   | 339   | 0    | 678   | 284  |
| Parking (#/hr)                    | 0    | 0     | 0     | 0    |       |      |
| Turn Type                         | Perm |       |       |      |       | Perm |
| Protected Phases                  |      | 6     | 7     |      | 8     |      |
| Permitted Phases                  | 6    |       |       |      |       | 8    |
| Actuated Green, G (s)             | 20.0 | 20.0  | 18.0  |      | 23.0  | 23.0 |
| Effective Green, g (s)            | 19.0 | 19.0  | 17.0  |      | 22.0  | 22.0 |
| Actuated g/C Ratio                | 0.27 | 0.27  | 0.24  |      | 0.31  | 0.31 |
| Clearance Time (s)                | 3.0  | 3.0   | 3.0   |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)                | 432  | 913   | 1147  |      | 1066  | 453  |
| v/s Ratio Prot                    |      | c0.19 | c0.07 |      | c0.20 |      |
| v/s Ratio Perm                    | 0.01 |       |       |      |       | 0.20 |
| v/c Ratio                         | 0.05 | 0.68  | 0.30  |      | 0.64  | 0.63 |
| Uniform Delay, d <sub>1</sub>     | 18.8 | 22.8  | 21.6  |      | 20.6  | 20.5 |
| Progression Factor                | 0.24 | 0.53  | 0.19  |      | 1.00  | 1.00 |
| Incremental Delay, d <sub>2</sub> | 0.2  | 3.8   | 0.6   |      | 2.9   | 6.4  |
| Delay (s)                         | 4.7  | 15.9  | 4.7   |      | 23.5  | 26.9 |
| Level of Service                  | A    | B     | A     |      | C     | C    |
| Approach Delay (s)                |      | 14.6  | 4.7   |      | 24.5  |      |
| Approach LOS                      |      | B     | A     |      | C     |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 17.1  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.55  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 56.4% | ICU Level of Service | B    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |



HCM Signalized Intersection Capacity Analysis  
3438: P Street & Alhambra

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL   | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|-------|------|-------|------|------|
| Lane Configurations    |      |      |      |      | ↑↑↑  |      | ↖    | ↗     |      | ↖     | ↗    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      | 4.0  | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor      |      |      |      |      | 0.91 |      | 1.00 | 1.00  |      | 1.00  | 1.00 |      |
| Flt                    |      |      |      |      | 0.97 |      | 1.00 | 0.95  |      | 1.00  | 0.96 |      |
| Flt Protected          |      |      |      |      | 1.00 |      | 0.95 | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)      |      |      |      |      | 4894 |      | 1770 | 1764  |      | 1770  | 1792 |      |
| Flt Permitted          |      |      |      |      | 1.00 |      | 0.95 | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)      |      |      |      |      | 4894 |      | 1770 | 1764  |      | 1770  | 1792 |      |
| Volume (vph)           | 0    | 0    | 0    | 75   | 717  | 233  | 105  | 349   | 190  | 222   | 256  | 87   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 75   | 717  | 233  | 105  | 349   | 190  | 222   | 256  | 87   |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 76   | 0    | 0    | 28    | 0    | 0     | 17   | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 949  | 0    | 105  | 511   | 0    | 222   | 326  | 0    |
| Turn Type              |      |      |      |      | Perm |      | Prot |       |      | Prot  |      |      |
| Protected Phases       |      |      |      |      |      | 6    | 3    | 8     |      | 7     | 4    |      |
| Permitted Phases       |      |      |      |      | 6    |      |      |       |      |       |      |      |
| Actuated Green, G (s)  |      |      |      |      |      | 18.0 | 10.0 | 29.0  |      | 14.0  | 33.0 |      |
| Effective Green, g (s) |      |      |      |      |      | 17.0 | 9.0  | 28.0  |      | 13.0  | 32.0 |      |
| Actuated g/C Ratio     |      |      |      |      |      | 0.24 | 0.13 | 0.40  |      | 0.19  | 0.46 |      |
| Clearance Time (s)     |      |      |      |      |      | 3.0  | 3.0  | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     |      |      |      |      |      | 1189 | 228  | 706   |      | 329   | 819  |      |
| v/s Ratio Prot         |      |      |      |      |      |      | 0.06 | c0.29 |      | c0.13 | 0.18 |      |
| v/s Ratio Perm         |      |      |      |      |      | 0.19 |      |       |      |       |      |      |
| v/c Ratio              |      |      |      |      |      | 0.80 | 0.46 | 0.72  |      | 0.67  | 0.40 |      |
| Uniform Delay, d1      |      |      |      |      |      | 24.9 | 28.3 | 17.7  |      | 26.5  | 12.6 |      |
| Progression Factor     |      |      |      |      |      | 1.00 | 1.00 | 1.00  |      | 0.76  | 0.72 |      |
| Incremental Delay, d2  |      |      |      |      |      | 5.6  | 6.6  | 6.3   |      | 8.6   | 1.2  |      |
| Delay (s)              |      |      |      |      |      | 30.5 | 34.8 | 24.1  |      | 28.6  | 10.2 |      |
| Level of Service       |      |      |      |      |      | C    | C    | C     |      | C     | B    |      |
| Approach Delay (s)     |      | 0.0  |      |      |      | 30.5 |      | 25.8  |      |       | 17.4 |      |
| Approach LOS           |      | A    |      |      |      | C    |      | C     |      |       | B    |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 25.9  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.73  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 72.8% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 3444: Q Street & 29th Street

6/1/2005



| Movement                          | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|-------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations               |      | ↑↑    |      |      |      |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0   |      |      |      |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor                 |      | 0.95  |      |      |      |      |      |      |      |      | 0.91 |      |
| Fr <sub>t</sub>                   |      | 0.98  |      |      |      |      |      |      |      |      | 1.00 |      |
| Fl <sub>t</sub> Protected         |      | 1.00  |      |      |      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (prot)                 |      | 3453  |      |      |      |      |      |      |      |      | 5025 |      |
| Fl <sub>t</sub> Permitted         |      | 1.00  |      |      |      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (perm)                 |      | 3453  |      |      |      |      |      |      |      |      | 5025 |      |
| Volume (vph)                      | 0    | 364   | 71   | 0    | 0    | 0    | 0    | 0    | 0    | 237  | 751  | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 364   | 71   | 0    | 0    | 0    | 0    | 0    | 0    | 237  | 751  | 0    |
| RTOR Reduction (vph)              | 0    | 23    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 81   | 0    |
| Lane Group Flow (vph)             | 0    | 412   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 907  | 0    |
| Turn Type                         |      |       |      |      |      |      |      |      |      | Perm |      |      |
| Protected Phases                  |      | 2     |      |      |      |      |      |      |      |      |      | 4    |
| Permitted Phases                  |      |       |      |      |      |      |      |      |      | 4    |      |      |
| Actuated Green, G (s)             |      | 31.0  |      |      |      |      |      |      |      |      | 33.0 |      |
| Effective Green, g (s)            |      | 30.0  |      |      |      |      |      |      |      |      | 32.0 |      |
| Actuated g/C Ratio                |      | 0.43  |      |      |      |      |      |      |      |      | 0.46 |      |
| Clearance Time (s)                |      | 3.0   |      |      |      |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |      | 1480  |      |      |      |      |      |      |      |      | 2297 |      |
| v/s Ratio Prot                    |      | c0.12 |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm                    |      |       |      |      |      |      |      |      |      |      | 0.18 |      |
| v/c Ratio                         |      | 0.28  |      |      |      |      |      |      |      |      | 0.39 |      |
| Uniform Delay, d <sub>1</sub>     |      | 13.0  |      |      |      |      |      |      |      |      | 12.6 |      |
| Progression Factor                |      | 1.00  |      |      |      |      |      |      |      |      | 0.21 |      |
| Incremental Delay, d <sub>2</sub> |      | 0.5   |      |      |      |      |      |      |      |      | 0.4  |      |
| Delay (s)                         |      | 13.4  |      |      |      |      |      |      |      |      | 3.1  |      |
| Level of Service                  |      | B     |      |      |      |      |      |      |      |      | A    |      |
| Approach Delay (s)                |      | 13.4  |      |      | 0.0  |      |      | 0.0  |      |      | 3.1  |      |
| Approach LOS                      |      | B     |      |      | A    |      |      | A    |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 6.3   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.34  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 38.3% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 3467: N Street & Alhambra

6/1/2005



| Movement                          | EBL                 | EBT   | EBR   | WBL  | WBT  | WBR  | NBL                  | NBT   | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|---------------------|-------|-------|------|------|------|----------------------|-------|------|------|------|------|
| Lane Configurations               |                     | ↕     |       |      | ↕    |      |                      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)                | 1900                | 1900  | 1900  | 1900 | 1900 | 1900 | 1900                 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |                     | 4.0   |       |      | 4.0  |      |                      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor                 |                     | 1.00  |       |      | 1.00 |      |                      | 1.00  |      |      | 1.00 |      |
| Fr <sub>t</sub>                   |                     | 0.95  |       |      | 0.99 |      |                      | 0.99  |      |      | 0.99 |      |
| Fl <sub>t</sub> Protected         |                     | 0.98  |       |      | 0.99 |      |                      | 1.00  |      |      | 1.00 |      |
| Satd. Flow (prot)                 |                     | 1575  |       |      | 1636 |      |                      | 1648  |      |      | 1662 |      |
| Fl <sub>t</sub> Permitted         |                     | 0.81  |       |      | 0.88 |      |                      | 0.97  |      |      | 0.99 |      |
| Satd. Flow (perm)                 |                     | 1300  |       |      | 1449 |      |                      | 1602  |      |      | 1640 |      |
| Volume (vph)                      | 129                 | 144   | 142   | 58   | 194  | 30   | 28                   | 483   | 62   | 12   | 412  | 24   |
| Peak-hour factor, PHF             | 1.00                | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00                 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 129                 | 144   | 142   | 58   | 194  | 30   | 28                   | 483   | 62   | 12   | 412  | 24   |
| RTOR Reduction (vph)              | 0                   | 27    | 0     | 0    | 6    | 0    | 0                    | 6     | 0    | 0    | 3    | 0    |
| Lane Group Flow (vph)             | 0                   | 388   | 0     | 0    | 276  | 0    | 0                    | 567   | 0    | 0    | 445  | 0    |
| Parking (#/hr)                    | 0                   | 0     | 0     | 0    | 0    | 0    | 0                    | 0     | 0    | 0    | 0    | 0    |
| Turn Type                         | Perm                |       | Perm  |      | Perm |      | Perm                 |       | Perm |      | Perm |      |
| Protected Phases                  |                     | 4     |       |      | 8    |      |                      | 2     |      |      | 6    |      |
| Permitted Phases                  | 4                   |       |       | 8    |      |      | 2                    |       |      | 6    |      |      |
| Actuated Green, G (s)             |                     | 30.0  |       |      | 30.0 |      |                      | 34.0  |      |      | 34.0 |      |
| Effective Green, g (s)            |                     | 29.0  |       |      | 29.0 |      |                      | 33.0  |      |      | 33.0 |      |
| Actuated g/C Ratio                |                     | 0.41  |       |      | 0.41 |      |                      | 0.47  |      |      | 0.47 |      |
| Clearance Time (s)                |                     | 3.0   |       |      | 3.0  |      |                      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |                     | 539   |       |      | 600  |      |                      | 755   |      |      | 773  |      |
| v/s Ratio Prot                    |                     |       |       |      |      |      |                      |       |      |      |      |      |
| v/s Ratio Perm                    |                     | c0.30 |       |      | 0.19 |      |                      | c0.35 |      |      | 0.27 |      |
| v/c Ratio                         |                     | 0.72  |       |      | 0.46 |      |                      | 0.75  |      |      | 0.58 |      |
| Uniform Delay, d1                 |                     | 17.1  |       |      | 14.8 |      |                      | 15.1  |      |      | 13.4 |      |
| Progression Factor                |                     | 0.65  |       |      | 1.00 |      |                      | 0.62  |      |      | 0.28 |      |
| Incremental Delay, d2             |                     | 7.4   |       |      | 2.5  |      |                      | 4.3   |      |      | 2.4  |      |
| Delay (s)                         |                     | 18.6  |       |      | 17.4 |      |                      | 13.7  |      |      | 6.2  |      |
| Level of Service                  |                     | B     |       |      | B    |      |                      | B     |      |      | A    |      |
| Approach Delay (s)                |                     | 18.6  |       |      | 17.4 |      |                      | 13.7  |      |      | 6.2  |      |
| Approach LOS                      |                     | B     |       |      | B    |      |                      | B     |      |      | A    |      |
| <b>Intersection Summary</b>       |                     |       |       |      |      |      |                      |       |      |      |      |      |
| HCM Average Control Delay         |                     |       | 13.5  |      |      |      | HCM Level of Service |       |      |      | B    |      |
| HCM Volume to Capacity ratio      |                     |       | 0.74  |      |      |      |                      |       |      |      |      |      |
| Actuated Cycle Length (s)         |                     |       | 70.0  |      |      |      | Sum of lost time (s) |       |      |      | 8.0  |      |
| Intersection Capacity Utilization |                     |       | 86.1% |      |      |      | ICU Level of Service |       |      |      | E    |      |
| Analysis Period (min)             |                     |       | 15    |      |      |      |                      |       |      |      |      |      |
| c                                 | Critical Lane Group |       |       |      |      |      |                      |       |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
5802: K Street & 29th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑    | ↗    | ↖    | ↑     |      |      |      |      |      | ↔↑↔  |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  | 4.0  | 4.0   |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00 | 1.00 | 1.00 | 1.00  |      |      |      |      |      | 0.91 |      |
| Frt                    |      | 1.00 | 0.85 | 1.00 | 1.00  |      |      |      |      |      | 0.96 |      |
| Flt Protected          |      | 1.00 | 1.00 | 0.95 | 1.00  |      |      |      |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 1863 | 1583 | 1770 | 1863  |      |      |      |      |      | 4874 |      |
| Flt Permitted          |      | 1.00 | 1.00 | 0.67 | 1.00  |      |      |      |      |      | 1.00 |      |
| Satd. Flow (perm)      |      | 1863 | 1583 | 1239 | 1863  |      |      |      |      |      | 4874 |      |
| Volume (vph)           | 0    | 144  | 116  | 201  | 510   | 0    | 0    | 0    | 0    | 84   | 796  | 299  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 144  | 116  | 201  | 510   | 0    | 0    | 0    | 0    | 84   | 796  | 299  |
| RTOR Reduction (vph)   | 0    | 0    | 30   | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 87   | 0    |
| Lane Group Flow (vph)  | 0    | 144  | 86   | 201  | 510   | 0    | 0    | 0    | 0    | 0    | 1092 | 0    |
| Turn Type              |      |      | Perm | Perm |       |      |      |      |      |      | Perm |      |
| Protected Phases       |      | 4    |      |      | 8     |      |      |      |      |      |      | 6    |
| Permitted Phases       |      |      | 4    | 8    |       |      |      |      |      |      | 6    |      |
| Actuated Green, G (s)  |      | 37.0 | 37.0 | 37.0 | 37.0  |      |      |      |      |      | 27.0 |      |
| Effective Green, g (s) |      | 36.0 | 36.0 | 36.0 | 36.0  |      |      |      |      |      | 26.0 |      |
| Actuated g/C Ratio     |      | 0.51 | 0.51 | 0.51 | 0.51  |      |      |      |      |      | 0.37 |      |
| Clearance Time (s)     |      | 3.0  | 3.0  | 3.0  | 3.0   |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 958  | 814  | 637  | 958   |      |      |      |      |      | 1810 |      |
| v/s Ratio Prot         |      | 0.08 |      |      | c0.27 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      | 0.05 | 0.16 |       |      |      |      |      |      | 0.22 |      |
| v/c Ratio              |      | 0.15 | 0.11 | 0.32 | 0.53  |      |      |      |      |      | 0.60 |      |
| Uniform Delay, d1      |      | 8.9  | 8.7  | 9.9  | 11.4  |      |      |      |      |      | 17.8 |      |
| Progression Factor     |      | 0.77 | 0.67 | 0.67 | 0.64  |      |      |      |      |      | 0.62 |      |
| Incremental Delay, d2  |      | 0.3  | 0.3  | 1.2  | 2.0   |      |      |      |      |      | 1.1  |      |
| Delay (s)              |      | 7.2  | 6.1  | 7.8  | 9.3   |      |      |      |      |      | 12.2 |      |
| Level of Service       |      | A    | A    | A    | A     |      |      |      |      |      | B    |      |
| Approach Delay (s)     |      | 6.7  |      |      | 8.9   |      |      | 0.0  |      |      | 12.2 |      |
| Approach LOS           |      | A    |      |      | A     |      |      | A    |      |      | B    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.4  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.56  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 57.3% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 5848: J Street & 30th Street

6/1/2005



| Movement               | EBL2 | EBL  | EBT   | WBR2 | NBL   | NBT  | NBR  |
|------------------------|------|------|-------|------|-------|------|------|
| Lane Configurations    |      | ↙    | ↕↕↕   | ↗    | ↙     | ↕↕   |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor      |      | 0.86 | 0.86  |      | 0.91  | 0.91 |      |
| Frt                    |      | 1.00 | 1.00  |      | 1.00  | 0.95 |      |
| Flt Protected          |      | 0.95 | 1.00  |      | 0.95  | 0.99 |      |
| Satd. Flow (prot)      |      | 1522 | 4646  |      | 1610  | 3189 |      |
| Flt Permitted          |      | 0.95 | 1.00  |      | 0.95  | 0.99 |      |
| Satd. Flow (perm)      |      | 1522 | 4646  |      | 1610  | 3189 |      |
| Volume (vph)           | 138  | 105  | 792   | 0    | 337   | 214  | 155  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 138  | 105  | 792   | 0    | 337   | 214  | 155  |
| RTOR Reduction (vph)   | 0    | 67   | 0     | 0    | 0     | 51   | 0    |
| Lane Group Flow (vph)  | 0    | 176  | 792   | 0    | 232   | 423  | 0    |
| Parking (#/hr)         |      |      | 0     | 0    |       |      | 0    |
| Turn Type              | Perm | Perm |       | Free | Perm  |      |      |
| Protected Phases       |      |      | 2     |      |       | 8    |      |
| Permitted Phases       | 2    | 2    |       | Free | 8     |      |      |
| Actuated Green, G (s)  |      | 31.0 | 31.0  |      | 33.0  | 33.0 |      |
| Effective Green, g (s) |      | 30.0 | 30.0  |      | 32.0  | 32.0 |      |
| Actuated g/C Ratio     |      | 0.43 | 0.43  |      | 0.46  | 0.46 |      |
| Clearance Time (s)     |      | 3.0  | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     |      | 652  | 1991  |      | 736   | 1458 |      |
| v/s Ratio Prot         |      |      | c0.17 |      |       |      |      |
| v/s Ratio Perm         |      | 0.12 |       |      | c0.14 | 0.13 |      |
| v/c Ratio              |      | 0.27 | 0.40  |      | 0.32  | 0.29 |      |
| Uniform Delay, d1      |      | 12.9 | 13.8  |      | 12.1  | 11.9 |      |
| Progression Factor     |      | 0.62 | 0.73  |      | 0.52  | 0.36 |      |
| Incremental Delay, d2  |      | 0.7  | 0.4   |      | 1.1   | 0.5  |      |
| Delay (s)              |      | 8.7  | 10.4  |      | 7.3   | 4.7  |      |
| Level of Service       |      | A    | B     |      | A     | A    |      |
| Approach Delay (s)     |      |      | 10.0  |      |       | 5.6  |      |
| Approach LOS           |      |      | B     |      |       | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 8.2   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.36  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 35.8% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 5849: L Street & 30th Street

6/1/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT   | WBR  | NBL                  | NBT   | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|-------|------|-------|------|----------------------|-------|------|------|------|------|
| Lane Configurations               |      |      |       |      | ↑↑↑   |      | ↖                    | ↑↑↑   |      |      |      |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 | 1900                 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      |      |       |      | 4.0   |      | 4.0                  | 4.0   |      |      |      |      |
| Lane Util. Factor                 |      |      |       |      | 0.91  |      | 0.86                 | 0.86  |      |      |      |      |
| Frt                               |      |      |       |      | 0.98  |      | 1.00                 | 1.00  |      |      |      |      |
| Flt Protected                     |      |      |       |      | 1.00  |      | 0.95                 | 1.00  |      |      |      |      |
| Satd. Flow (prot)                 |      |      |       |      | 4988  |      | 1522                 | 4646  |      |      |      |      |
| Flt Permitted                     |      |      |       |      | 1.00  |      | 0.95                 | 1.00  |      |      |      |      |
| Satd. Flow (perm)                 |      |      |       |      | 4988  |      | 1522                 | 4646  |      |      |      |      |
| Volume (vph)                      | 0    | 0    | 0     | 0    | 439   | 64   | 288                  | 955   | 0    | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00                 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 0    | 439   | 64   | 288                  | 955   | 0    | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 0    | 27    | 0    | 156                  | 0     | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 0    | 476   | 0    | 132                  | 955   | 0    | 0    | 0    | 0    |
| Parking (#/hr)                    |      |      |       |      |       | 0    |                      | 0     |      |      |      |      |
| Turn Type                         |      |      |       |      |       |      | Perm                 |       |      |      |      |      |
| Protected Phases                  |      |      |       |      | 6     |      |                      | 8     |      |      |      |      |
| Permitted Phases                  |      |      |       |      |       |      | 8                    |       |      |      |      |      |
| Actuated Green, G (s)             |      |      |       |      | 31.0  |      | 33.0                 | 33.0  |      |      |      |      |
| Effective Green, g (s)            |      |      |       |      | 30.0  |      | 32.0                 | 32.0  |      |      |      |      |
| Actuated g/C Ratio                |      |      |       |      | 0.43  |      | 0.46                 | 0.46  |      |      |      |      |
| Clearance Time (s)                |      |      |       |      | 3.0   |      | 3.0                  | 3.0   |      |      |      |      |
| Lane Grp Cap (vph)                |      |      |       |      | 2138  |      | 696                  | 2124  |      |      |      |      |
| v/s Ratio Prot                    |      |      |       |      | c0.10 |      |                      | c0.21 |      |      |      |      |
| v/s Ratio Perm                    |      |      |       |      |       |      | 0.09                 |       |      |      |      |      |
| v/c Ratio                         |      |      |       |      | 0.22  |      | 0.19                 | 0.45  |      |      |      |      |
| Uniform Delay, d1                 |      |      |       |      | 12.6  |      | 11.3                 | 13.0  |      |      |      |      |
| Progression Factor                |      |      |       |      | 1.10  |      | 0.03                 | 0.33  |      |      |      |      |
| Incremental Delay, d2             |      |      |       |      | 0.2   |      | 0.4                  | 0.5   |      |      |      |      |
| Delay (s)                         |      |      |       |      | 14.1  |      | 0.8                  | 4.8   |      |      |      |      |
| Level of Service                  |      |      |       |      | B     |      | A                    | A     |      |      |      |      |
| Approach Delay (s)                |      | 0.0  |       |      | 14.1  |      |                      | 3.9   |      |      | 0.0  |      |
| Approach LOS                      |      | A    |       |      | B     |      |                      | A     |      |      | A    |      |
| <b>Intersection Summary</b>       |      |      |       |      |       |      |                      |       |      |      |      |      |
| HCM Average Control Delay         |      |      | 6.8   |      |       |      | HCM Level of Service |       |      |      | A    |      |
| HCM Volume to Capacity ratio      |      |      | 0.34  |      |       |      |                      |       |      |      |      |      |
| Actuated Cycle Length (s)         |      |      | 70.0  |      |       |      | Sum of lost time (s) |       |      |      | 8.0  |      |
| Intersection Capacity Utilization |      |      | 40.4% |      |       |      | ICU Level of Service |       |      |      | A    |      |
| Analysis Period (min)             |      |      | 15    |      |       |      |                      |       |      |      |      |      |
| c Critical Lane Group             |      |      |       |      |       |      |                      |       |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
5880: N Street & 30th Street

6/1/2005



| Movement                          | EBL  | EBT  | WBT   | WBR  | NBL  | NBT                  | NBR   | NEL2 | NEL   | NER  |
|-----------------------------------|------|------|-------|------|------|----------------------|-------|------|-------|------|
| Lane Configurations               | ↵    | ↑    | ↵     |      |      | ↑↑↑                  |       |      | ↵↵    |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900 | 1900                 | 1900  | 1900 | 1900  | 1900 |
| Total Lost time (s)               | 4.0  | 4.0  | 4.0   |      |      | 4.0                  |       |      | 4.0   |      |
| Lane Util. Factor                 | 1.00 | 1.00 | 1.00  |      |      | 0.91                 |       |      | 0.97  |      |
| Frt                               | 1.00 | 1.00 | 0.98  |      |      | 0.99                 |       |      | 0.99  |      |
| Flt Protected                     | 0.95 | 1.00 | 1.00  |      |      | 0.99                 |       |      | 0.96  |      |
| Satd. Flow (prot)                 | 1770 | 1863 | 1835  |      |      | 4979                 |       |      | 3414  |      |
| Flt Permitted                     | 0.46 | 1.00 | 1.00  |      |      | 0.99                 |       |      | 0.96  |      |
| Satd. Flow (perm)                 | 859  | 1863 | 1835  |      |      | 4979                 |       |      | 3414  |      |
| Volume (vph)                      | 51   | 173  | 206   | 26   | 81   | 362                  | 41    | 310  | 876   | 99   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00                 | 1.00  | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)                   | 51   | 173  | 206   | 26   | 81   | 362                  | 41    | 310  | 876   | 99   |
| RTOR Reduction (vph)              | 0    | 0    | 6     | 0    | 0    | 15                   | 0     | 0    | 0     | 0    |
| Lane Group Flow (vph)             | 51   | 173  | 226   | 0    | 0    | 469                  | 0     | 0    | 1285  | 0    |
| Turn Type                         | Perm |      |       | Perm |      |                      | Split |      |       |      |
| Protected Phases                  |      | 4    | 8     |      |      | 2                    |       | 6    | 6     |      |
| Permitted Phases                  | 4    |      |       | 2    |      |                      |       |      |       |      |
| Actuated Green, G (s)             | 17.0 | 17.0 | 17.0  |      |      | 11.0                 |       |      | 33.0  |      |
| Effective Green, g (s)            | 16.0 | 16.0 | 16.0  |      |      | 10.0                 |       |      | 32.0  |      |
| Actuated g/C Ratio                | 0.23 | 0.23 | 0.23  |      |      | 0.14                 |       |      | 0.46  |      |
| Clearance Time (s)                | 3.0  | 3.0  | 3.0   |      |      | 3.0                  |       |      | 3.0   |      |
| Lane Grp Cap (vph)                | 196  | 426  | 419   |      |      | 711                  |       |      | 1561  |      |
| v/s Ratio Prot                    |      | 0.09 | c0.12 |      |      |                      |       |      | c0.38 |      |
| v/s Ratio Perm                    | 0.06 |      |       |      |      | 0.09                 |       |      |       |      |
| v/c Ratio                         | 0.26 | 0.41 | 0.54  |      |      | 0.66                 |       |      | 0.82  |      |
| Uniform Delay, d1                 | 22.1 | 23.0 | 23.8  |      |      | 28.4                 |       |      | 16.5  |      |
| Progression Factor                | 0.36 | 0.39 | 0.55  |      |      | 0.80                 |       |      | 1.00  |      |
| Incremental Delay, d2             | 2.9  | 2.6  | 4.3   |      |      | 4.7                  |       |      | 5.0   |      |
| Delay (s)                         | 10.9 | 11.6 | 17.4  |      |      | 27.4                 |       |      | 21.6  |      |
| Level of Service                  | B    | B    | B     |      |      | C                    |       |      | C     |      |
| Approach Delay (s)                |      | 11.4 | 17.4  |      |      | 27.4                 |       |      | 21.6  |      |
| Approach LOS                      |      | B    | B     |      |      | C                    |       |      | C     |      |
| <b>Intersection Summary</b>       |      |      |       |      |      |                      |       |      |       |      |
| HCM Average Control Delay         |      |      | 21.4  |      |      | HCM Level of Service |       |      | C     |      |
| HCM Volume to Capacity ratio      |      |      | 0.72  |      |      |                      |       |      |       |      |
| Actuated Cycle Length (s)         |      |      | 70.0  |      |      | Sum of lost time (s) |       |      | 12.0  |      |
| Intersection Capacity Utilization |      |      | 75.6% |      |      | ICU Level of Service |       |      | D     |      |
| Analysis Period (min)             |      |      | 15    |      |      |                      |       |      |       |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 5882: P Street & 30th Street

6/1/2005



| Movement               | WBT   | WBR  | NBL2 | NBL   | NBT  |
|------------------------|-------|------|------|-------|------|
| Lane Configurations    | ↑↑↑   |      |      | ↑     | ↑↑↑  |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0   |      |      | 4.0   | 4.0  |
| Lane Util. Factor      | 0.91  |      |      | 1.00  | 0.91 |
| Frt                    | 0.96  |      |      | 1.00  | 1.00 |
| Flt Protected          | 1.00  |      |      | 0.95  | 1.00 |
| Satd. Flow (prot)      | 4900  |      |      | 1593  | 4916 |
| Flt Permitted          | 1.00  |      |      | 0.95  | 1.00 |
| Satd. Flow (perm)      | 4900  |      |      | 1593  | 4916 |
| Volume (vph)           | 560   | 180  | 308  | 95    | 286  |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 560   | 180  | 308  | 95    | 286  |
| RTOR Reduction (vph)   | 0     | 0    | 0    | 81    | 0    |
| Lane Group Flow (vph)  | 740   | 0    | 0    | 322   | 286  |
| Parking (#/hr)         |       | 0    | 0    | 0     | 0    |
| Turn Type              |       |      | Perm | Perm  |      |
| Protected Phases       | 6     |      |      |       | 8    |
| Permitted Phases       |       |      | 8    | 8     |      |
| Actuated Green, G (s)  | 28.0  |      |      | 36.0  | 36.0 |
| Effective Green, g (s) | 27.0  |      |      | 35.0  | 35.0 |
| Actuated g/C Ratio     | 0.39  |      |      | 0.50  | 0.50 |
| Clearance Time (s)     | 3.0   |      |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)     | 1890  |      |      | 797   | 2458 |
| v/s Ratio Prot         | c0.15 |      |      |       | 0.06 |
| v/s Ratio Perm         |       |      |      | c0.20 |      |
| v/c Ratio              | 0.39  |      |      | 0.40  | 0.12 |
| Uniform Delay, d1      | 15.6  |      |      | 11.0  | 9.3  |
| Progression Factor     | 0.36  |      |      | 1.00  | 1.00 |
| Incremental Delay, d2  | 0.4   |      |      | 1.5   | 0.1  |
| Delay (s)              | 6.1   |      |      | 12.5  | 9.4  |
| Level of Service       | A     |      |      | B     | A    |
| Approach Delay (s)     | 6.1   |      |      |       | 11.2 |
| Approach LOS           | A     |      |      |       | B    |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 8.5   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.40  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 43.8% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
5886: Capitol & 30th Street

6/1/2005



| Movement               | EBL   | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|-------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    | ↙     | ↕    |      |      | ↕     |      |      | ↕    |      |      |      |      |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0   | 4.0  |      |      | 4.0   |      |      | 4.0  |      |      |      |      |
| Lane Util. Factor      | 1.00  | 0.95 |      |      | 0.95  |      |      | 0.91 |      |      |      |      |
| Frt                    | 1.00  | 1.00 |      |      | 0.96  |      |      | 0.99 |      |      |      |      |
| Flt Protected          | 0.95  | 1.00 |      |      | 1.00  |      |      | 0.99 |      |      |      |      |
| Satd. Flow (prot)      | 1770  | 3539 |      |      | 3381  |      |      | 4990 |      |      |      |      |
| Flt Permitted          | 0.95  | 1.00 |      |      | 1.00  |      |      | 0.99 |      |      |      |      |
| Satd. Flow (perm)      | 1770  | 3539 |      |      | 3381  |      |      | 4990 |      |      |      |      |
| Volume (vph)           | 125   | 234  | 0    | 0    | 472   | 200  | 139  | 1102 | 125  | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 125   | 234  | 0    | 0    | 472   | 200  | 139  | 1102 | 125  | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0     | 0    | 0    | 0    | 67    | 0    | 0    | 17   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 125   | 234  | 0    | 0    | 606   | 0    | 0    | 1349 | 0    | 0    | 0    | 0    |
| Turn Type              | Prot  |      |      |      |       | Perm |      |      |      |      |      |      |
| Protected Phases       | 7     | 4    |      |      | 8     |      |      | 2    |      |      |      |      |
| Permitted Phases       |       |      |      |      |       |      | 2    |      |      |      |      |      |
| Actuated Green, G (s)  | 12.0  | 37.0 |      |      | 22.0  |      |      | 27.0 |      |      |      |      |
| Effective Green, g (s) | 11.0  | 36.0 |      |      | 21.0  |      |      | 26.0 |      |      |      |      |
| Actuated g/C Ratio     | 0.16  | 0.51 |      |      | 0.30  |      |      | 0.37 |      |      |      |      |
| Clearance Time (s)     | 3.0   | 3.0  |      |      | 3.0   |      |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)     | 278   | 1820 |      |      | 1014  |      |      | 1853 |      |      |      |      |
| v/s Ratio Prot         | c0.07 | 0.07 |      |      | c0.18 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |       |      |      |      |       |      |      | 0.27 |      |      |      |      |
| v/c Ratio              | 0.45  | 0.13 |      |      | 0.60  |      |      | 0.73 |      |      |      |      |
| Uniform Delay, d1      | 26.8  | 8.8  |      |      | 20.9  |      |      | 19.0 |      |      |      |      |
| Progression Factor     | 0.82  | 0.64 |      |      | 0.17  |      |      | 0.59 |      |      |      |      |
| Incremental Delay, d2  | 5.0   | 0.1  |      |      | 1.7   |      |      | 1.7  |      |      |      |      |
| Delay (s)              | 26.8  | 5.8  |      |      | 5.4   |      |      | 12.8 |      |      |      |      |
| Level of Service       | C     | A    |      |      | A     |      |      | B    |      |      |      |      |
| Approach Delay (s)     |       | 13.1 |      |      | 5.4   |      |      | 12.8 |      |      | 0.0  |      |
| Approach LOS           |       | B    |      |      | A     |      |      | B    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 10.8  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.63  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 63.3% | ICU Level of Service | B    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
5888: Capitol & 29th Street

6/1/2005



| Movement                          | EBL  | EBT  | EBR   | WBL   | WBT  | WBR                  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|-------|-------|------|----------------------|------|------|------|------|------|------|
| Lane Configurations               |      | ↑↑   |       | ↘     | ↑↑   |                      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900  | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0  |       | 4.0   | 4.0  |                      |      |      |      |      | 4.0  |      |
| Lane Util. Factor                 |      | 0.95 |       | 1.00  | 0.95 |                      |      |      |      |      | 0.91 |      |
| Flt                               |      | 0.95 |       | 1.00  | 1.00 |                      |      |      |      |      | 0.96 |      |
| Flt Protected                     |      | 1.00 |       | 0.95  | 1.00 |                      |      |      |      |      | 0.99 |      |
| Satd. Flow (prot)                 |      | 3209 |       | 1770  | 3539 |                      |      |      |      |      | 4707 |      |
| Flt Permitted                     |      | 1.00 |       | 0.56  | 1.00 |                      |      |      |      |      | 0.99 |      |
| Satd. Flow (perm)                 |      | 3209 |       | 1052  | 3539 |                      |      |      |      |      | 4707 |      |
| Volume (vph)                      | 0    | 214  | 93    | 162   | 482  | 0                    | 0    | 0    | 0    | 147  | 649  | 249  |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 214  | 93    | 162   | 482  | 0                    | 0    | 0    | 0    | 147  | 649  | 249  |
| RTOR Reduction (vph)              | 0    | 50   | 0     | 0     | 0    | 0                    | 0    | 0    | 0    | 0    | 81   | 0    |
| Lane Group Flow (vph)             | 0    | 257  | 0     | 162   | 482  | 0                    | 0    | 0    | 0    | 0    | 964  | 0    |
| Parking (#/hr)                    |      | 0    | 0     |       |      |                      |      |      |      |      | 0    | 0    |
| Turn Type                         |      |      |       | Perm  |      |                      |      |      |      |      | Perm |      |
| Protected Phases                  |      | 4    |       |       | 8    |                      |      |      |      |      |      | 6    |
| Permitted Phases                  |      |      |       |       | 8    |                      |      |      |      |      | 6    |      |
| Actuated Green, G (s)             |      | 33.0 |       | 33.0  | 33.0 |                      |      |      |      |      | 31.0 |      |
| Effective Green, g (s)            |      | 32.0 |       | 32.0  | 32.0 |                      |      |      |      |      | 30.0 |      |
| Actuated g/C Ratio                |      | 0.46 |       | 0.46  | 0.46 |                      |      |      |      |      | 0.43 |      |
| Clearance Time (s)                |      | 3.0  |       | 3.0   | 3.0  |                      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |      | 1467 |       | 481   | 1618 |                      |      |      |      |      | 2017 |      |
| v/s Ratio Prot                    |      | 0.08 |       |       | 0.14 |                      |      |      |      |      |      |      |
| v/s Ratio Perm                    |      |      |       | c0.15 |      |                      |      |      |      |      | 0.20 |      |
| v/c Ratio                         |      | 0.17 |       | 0.34  | 0.30 |                      |      |      |      |      | 0.48 |      |
| Uniform Delay, d1                 |      | 11.2 |       | 12.2  | 11.9 |                      |      |      |      |      | 14.4 |      |
| Progression Factor                |      | 1.11 |       | 0.47  | 0.48 |                      |      |      |      |      | 0.13 |      |
| Incremental Delay, d2             |      | 0.2  |       | 1.5   | 0.4  |                      |      |      |      |      | 0.8  |      |
| Delay (s)                         |      | 12.7 |       | 7.2   | 6.2  |                      |      |      |      |      | 2.6  |      |
| Level of Service                  |      | B    |       | A     | A    |                      |      |      |      |      | A    |      |
| Approach Delay (s)                |      | 12.7 |       |       | 6.4  |                      |      | 0.0  |      |      | 2.6  |      |
| Approach LOS                      |      | B    |       |       | A    |                      |      | A    |      |      | A    |      |
| <b>Intersection Summary</b>       |      |      |       |       |      |                      |      |      |      |      |      |      |
| HCM Average Control Delay         |      |      | 5.4   |       |      | HCM Level of Service |      |      |      |      | A    |      |
| HCM Volume to Capacity ratio      |      |      | 0.41  |       |      |                      |      |      |      |      |      |      |
| Actuated Cycle Length (s)         |      |      | 70.0  |       |      | Sum of lost time (s) |      |      |      |      | 8.0  |      |
| Intersection Capacity Utilization |      |      | 63.3% |       |      | ICU Level of Service |      |      |      |      | B    |      |
| Analysis Period (min)             |      |      | 15    |       |      |                      |      |      |      |      |      |      |
| c Critical Lane Group             |      |      |       |       |      |                      |      |      |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
5890: Capitol & 26th St

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|-------|------|------|------|------|
| Lane Configurations    | ↖    | ↗    |      | ↖    | ↗     |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0  | 4.0  |      | 4.0  | 4.0   |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor      | 1.00 | 1.00 |      | 1.00 | 1.00  |      |      | 1.00  |      |      | 1.00 |      |
| Frt                    | 1.00 | 0.99 |      | 1.00 | 0.99  |      |      | 0.97  |      |      | 0.99 |      |
| Flt Protected          | 0.95 | 1.00 |      | 0.95 | 1.00  |      |      | 0.99  |      |      | 0.97 |      |
| Satd. Flow (prot)      | 1770 | 1664 |      | 1770 | 1662  |      |      | 1608  |      |      | 1620 |      |
| Flt Permitted          | 0.45 | 1.00 |      | 0.61 | 1.00  |      |      | 0.96  |      |      | 0.88 |      |
| Satd. Flow (perm)      | 835  | 1664 |      | 1143 | 1662  |      |      | 1560  |      |      | 1463 |      |
| Volume (vph)           | 12   | 221  | 12   | 6    | 380   | 23   | 15   | 40    | 16   | 30   | 22   | 3    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 12   | 221  | 12   | 6    | 380   | 23   | 15   | 40    | 16   | 30   | 22   | 3    |
| RTOR Reduction (vph)   | 0    | 4    | 0    | 0    | 4     | 0    | 0    | 10    | 0    | 0    | 2    | 0    |
| Lane Group Flow (vph)  | 12   | 229  | 0    | 6    | 399   | 0    | 0    | 61    | 0    | 0    | 53   | 0    |
| Parking (#/hr)         |      | 0    | 0    |      | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      | Perm |      | Perm  |      | Perm |       | Perm |      | Perm |      |
| Protected Phases       | 4    |      | 8    |      | 8     |      | 2    |       | 6    |      | 6    |      |
| Permitted Phases       | 4    |      | 8    |      | 8     |      | 2    |       | 6    |      | 6    |      |
| Actuated Green, G (s)  | 25.0 | 25.0 |      | 25.0 | 25.0  |      |      | 19.0  |      |      | 19.0 |      |
| Effective Green, g (s) | 24.0 | 24.0 |      | 24.0 | 24.0  |      |      | 18.0  |      |      | 18.0 |      |
| Actuated g/C Ratio     | 0.48 | 0.48 |      | 0.48 | 0.48  |      |      | 0.36  |      |      | 0.36 |      |
| Clearance Time (s)     | 3.0  | 3.0  |      | 3.0  | 3.0   |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)     | 401  | 799  |      | 549  | 798   |      |      | 562   |      |      | 527  |      |
| v/s Ratio Prot         |      | 0.14 |      |      | c0.24 |      |      |       |      |      |      |      |
| v/s Ratio Perm         | 0.01 |      |      | 0.01 |       |      |      | c0.04 |      |      | 0.04 |      |
| v/c Ratio              | 0.03 | 0.29 |      | 0.01 | 0.50  |      |      | 0.11  |      |      | 0.10 |      |
| Uniform Delay, d1      | 6.9  | 7.8  |      | 6.8  | 8.9   |      |      | 10.7  |      |      | 10.6 |      |
| Progression Factor     | 1.00 | 1.00 |      | 1.00 | 1.00  |      |      | 1.00  |      |      | 0.68 |      |
| Incremental Delay, d2  | 0.1  | 0.9  |      | 0.0  | 2.2   |      |      | 0.4   |      |      | 0.4  |      |
| Delay (s)              | 7.0  | 8.7  |      | 6.8  | 11.1  |      |      | 11.0  |      |      | 7.6  |      |
| Level of Service       | A    | A    |      | A    | B     |      |      | B     |      |      | A    |      |
| Approach Delay (s)     |      | 8.7  |      |      | 11.1  |      |      | 11.0  |      |      | 7.6  |      |
| Approach LOS           |      | A    |      |      | B     |      |      | B     |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.1  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.33  |                      |     |
| Actuated Cycle Length (s)         | 50.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 34.7% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

# HCM Signalized Intersection Capacity Analysis

6481: J Street & 28th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations    |      | ↑↑↑  |      |      |      |      |      | ↑     |      |      | ↑    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      |      |      |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor      |      | 0.91 |      |      |      |      |      | 1.00  |      |      | 1.00 |      |
| Frt                    |      | 1.00 |      |      |      |      |      | 0.92  |      |      | 1.00 |      |
| Flt Protected          |      | 1.00 |      |      |      |      |      | 1.00  |      |      | 0.98 |      |
| Satd. Flow (prot)      |      | 4885 |      |      |      |      |      | 1550  |      |      | 1647 |      |
| Flt Permitted          |      | 1.00 |      |      |      |      |      | 1.00  |      |      | 0.91 |      |
| Satd. Flow (perm)      |      | 4885 |      |      |      |      |      | 1550  |      |      | 1526 |      |
| Volume (vph)           | 34   | 859  | 27   | 0    | 0    | 0    | 0    | 73    | 93   | 19   | 34   | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 34   | 859  | 27   | 0    | 0    | 0    | 0    | 73    | 93   | 19   | 34   | 0    |
| RTOR Reduction (vph)   | 0    | 4    | 0    | 0    | 0    | 0    | 0    | 51    | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 916  | 0    | 0    | 0    | 0    | 0    | 115   | 0    | 0    | 53   | 0    |
| Parking (#/hr)         | 0    | 0    | 0    |      |      |      |      | 0     | 0    | 0    | 0    |      |
| Turn Type              | Perm |      |      |      |      |      | Perm |       |      |      |      |      |
| Protected Phases       |      | 4    |      |      |      |      |      | 2     |      |      |      | 6    |
| Permitted Phases       | 4    |      |      |      |      |      |      |       | 6    |      |      |      |
| Actuated Green, G (s)  |      | 33.0 |      |      |      |      |      | 31.0  |      |      | 31.0 |      |
| Effective Green, g (s) |      | 32.0 |      |      |      |      |      | 30.0  |      |      | 30.0 |      |
| Actuated g/C Ratio     |      | 0.46 |      |      |      |      |      | 0.43  |      |      | 0.43 |      |
| Clearance Time (s)     |      | 3.0  |      |      |      |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 2233 |      |      |      |      |      | 664   |      |      | 654  |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      | c0.07 |      |      |      |      |
| v/s Ratio Perm         |      | 0.19 |      |      |      |      |      |       |      |      | 0.03 |      |
| v/c Ratio              |      | 0.41 |      |      |      |      |      | 0.17  |      |      | 0.08 |      |
| Uniform Delay, d1      |      | 12.7 |      |      |      |      |      | 12.3  |      |      | 11.8 |      |
| Progression Factor     |      | 1.00 |      |      |      |      |      | 1.20  |      |      | 1.00 |      |
| Incremental Delay, d2  |      | 0.6  |      |      |      |      |      | 0.6   |      |      | 0.2  |      |
| Delay (s)              |      | 13.3 |      |      |      |      |      | 15.4  |      |      | 12.1 |      |
| Level of Service       |      | B    |      |      |      |      |      | B     |      |      | B    |      |
| Approach Delay (s)     |      | 13.3 |      |      | 0.0  |      |      | 15.4  |      |      | 12.1 |      |
| Approach LOS           |      | B    |      |      | A    |      |      | B     |      |      | B    |      |

## Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 13.5  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.30  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 40.8% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
6482: K Street & 28th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|-------|------|------|------|------|
| Lane Configurations    |      | ↕    | ↗    |      | ↕     | ↗    |      | ↕     | ↗    |      | ↕    | ↗    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  |      | 4.0   | 4.0  |      | 4.0   | 4.0  |      | 4.0  | 4.0  |
| Lane Util. Factor      |      | 1.00 | 1.00 |      | 1.00  | 1.00 |      | 1.00  | 1.00 |      | 1.00 | 1.00 |
| Frt                    |      | 1.00 | 0.85 |      | 1.00  | 0.85 |      | 1.00  | 0.85 |      | 1.00 | 0.85 |
| Flt Protected          |      | 1.00 | 1.00 |      | 1.00  | 1.00 |      | 0.99  | 1.00 |      | 0.99 | 1.00 |
| Satd. Flow (prot)      |      | 1672 | 1425 |      | 1674  | 1425 |      | 1666  | 1425 |      | 1664 | 1425 |
| Flt Permitted          |      | 0.98 | 1.00 |      | 0.99  | 1.00 |      | 0.97  | 1.00 |      | 0.97 | 1.00 |
| Satd. Flow (perm)      |      | 1641 | 1425 |      | 1667  | 1425 |      | 1628  | 1425 |      | 1621 | 1425 |
| Volume (vph)           | 7    | 127  | 12   | 14   | 555   | 78   | 15   | 104   | 115  | 11   | 65   | 8    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 7    | 127  | 12   | 14   | 555   | 78   | 15   | 104   | 115  | 11   | 65   | 8    |
| RTOR Reduction (vph)   | 0    | 0    | 5    | 0    | 0     | 24   | 0    | 0     | 82   | 0    | 0    | 6    |
| Lane Group Flow (vph)  | 0    | 134  | 7    | 0    | 569   | 54   | 0    | 119   | 33   | 0    | 76   | 2    |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      | Perm | Perm |       | Perm | Perm |       | Perm | Perm |      | Perm |
| Protected Phases       |      | 4    |      |      | 8     |      |      | 2     |      |      | 6    |      |
| Permitted Phases       | 4    |      | 4    | 8    |       | 8    | 2    |       | 2    | 6    |      | 6    |
| Actuated Green, G (s)  |      | 43.0 | 43.0 |      | 43.0  | 43.0 |      | 21.0  | 21.0 |      | 21.0 | 21.0 |
| Effective Green, g (s) |      | 42.0 | 42.0 |      | 42.0  | 42.0 |      | 20.0  | 20.0 |      | 20.0 | 20.0 |
| Actuated g/C Ratio     |      | 0.60 | 0.60 |      | 0.60  | 0.60 |      | 0.29  | 0.29 |      | 0.29 | 0.29 |
| Clearance Time (s)     |      | 3.0  | 3.0  |      | 3.0   | 3.0  |      | 3.0   | 3.0  |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |      | 985  | 855  |      | 1000  | 855  |      | 465   | 407  |      | 463  | 407  |
| v/s Ratio Prot         |      |      |      |      |       |      |      |       |      |      |      |      |
| v/s Ratio Perm         |      | 0.08 | 0.01 |      | c0.34 | 0.04 |      | c0.07 | 0.02 |      | 0.05 | 0.00 |
| v/c Ratio              |      | 0.14 | 0.01 |      | 0.57  | 0.06 |      | 0.26  | 0.08 |      | 0.16 | 0.01 |
| Uniform Delay, d1      |      | 6.1  | 5.6  |      | 8.5   | 5.8  |      | 19.3  | 18.3 |      | 18.7 | 17.9 |
| Progression Factor     |      | 1.00 | 1.00 |      | 0.83  | 0.64 |      | 0.87  | 1.36 |      | 0.91 | 0.93 |
| Incremental Delay, d2  |      | 0.3  | 0.0  |      | 2.0   | 0.1  |      | 1.2   | 0.4  |      | 0.8  | 0.0  |
| Delay (s)              |      | 6.4  | 5.6  |      | 9.0   | 3.8  |      | 18.0  | 25.2 |      | 17.9 | 16.7 |
| Level of Service       |      | A    | A    |      | A     | A    |      | B     | C    |      | B    | B    |
| Approach Delay (s)     |      | 6.3  |      |      | 8.4   |      |      | 21.6  |      |      | 17.8 |      |
| Approach LOS           |      | A    |      |      | A     |      |      | C     |      |      | B    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.6  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.47  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 60.0% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6483: L Street & 28th Street

6/1/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT  | WBR  | NBL  | NBT                  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|-------|------|------|------|------|----------------------|------|------|------|------|
| Lane Configurations               |      |      |       |      | ↕↕   |      |      | ↕                    |      |      | ↕    |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      |      |       |      | 4.0  |      |      | 4.0                  |      |      | 4.0  |      |
| Lane Util. Factor                 |      |      |       |      | 0.95 |      |      | 1.00                 |      |      | 1.00 |      |
| Frt                               |      |      |       |      | 0.99 |      |      | 1.00                 |      |      | 0.97 |      |
| Flt Protected                     |      |      |       |      | 0.99 |      |      | 0.99                 |      |      | 1.00 |      |
| Satd. Flow (prot)                 |      |      |       |      | 3287 |      |      | 1654                 |      |      | 1630 |      |
| Flt Permitted                     |      |      |       |      | 0.99 |      |      | 0.92                 |      |      | 1.00 |      |
| Satd. Flow (perm)                 |      |      |       |      | 3287 |      |      | 1536                 |      |      | 1630 |      |
| Volume (vph)                      | 0    | 0    | 0     | 159  | 718  | 93   | 43   | 118                  | 0    | 0    | 74   | 19   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 159  | 718  | 93   | 43   | 118                  | 0    | 0    | 74   | 19   |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 0    | 12   | 0    | 0    | 0                    | 0    | 0    | 13   | 0    |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 0    | 958  | 0    | 0    | 161                  | 0    | 0    | 80   | 0    |
| Parking (#/hr)                    | 0    | 0    | 0     | 0    | 0    | 0    | 0    | 0                    | 0    | 0    | 0    | 0    |
| Turn Type                         |      |      |       | Perm |      |      | Perm |                      |      |      |      |      |
| Protected Phases                  |      |      |       |      | 6    |      |      | 8                    |      |      | 4    |      |
| Permitted Phases                  |      |      |       |      | 6    |      |      | 8                    |      |      |      |      |
| Actuated Green, G (s)             |      |      |       |      | 40.0 |      |      | 24.0                 |      |      | 24.0 |      |
| Effective Green, g (s)            |      |      |       |      | 39.0 |      |      | 23.0                 |      |      | 23.0 |      |
| Actuated g/C Ratio                |      |      |       |      | 0.56 |      |      | 0.33                 |      |      | 0.33 |      |
| Clearance Time (s)                |      |      |       |      | 3.0  |      |      | 3.0                  |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |      |      |       |      | 1831 |      |      | 505                  |      |      | 536  |      |
| v/s Ratio Prot                    |      |      |       |      |      |      |      |                      |      |      | 0.05 |      |
| v/s Ratio Perm                    |      |      |       |      | 0.29 |      |      | c0.10                |      |      |      |      |
| v/c Ratio                         |      |      |       |      | 0.52 |      |      | 0.32                 |      |      | 0.15 |      |
| Uniform Delay, d1                 |      |      |       |      | 9.7  |      |      | 17.6                 |      |      | 16.6 |      |
| Progression Factor                |      |      |       |      | 0.55 |      |      | 0.69                 |      |      | 0.43 |      |
| Incremental Delay, d2             |      |      |       |      | 1.1  |      |      | 1.4                  |      |      | 0.6  |      |
| Delay (s)                         |      |      |       |      | 6.3  |      |      | 13.7                 |      |      | 7.7  |      |
| Level of Service                  |      |      |       |      | A    |      |      | B                    |      |      | A    |      |
| Approach Delay (s)                |      | 0.0  |       |      | 6.3  |      |      | 13.7                 |      |      | 7.7  |      |
| Approach LOS                      |      | A    |       |      | A    |      |      | B                    |      |      | A    |      |
| <b>Intersection Summary</b>       |      |      |       |      |      |      |      |                      |      |      |      |      |
| HCM Average Control Delay         |      |      | 7.4   |      |      |      |      | HCM Level of Service |      |      | A    |      |
| HCM Volume to Capacity ratio      |      |      | 0.45  |      |      |      |      |                      |      |      |      |      |
| Actuated Cycle Length (s)         |      |      | 70.0  |      |      |      |      | Sum of lost time (s) |      |      | 8.0  |      |
| Intersection Capacity Utilization |      |      | 49.4% |      |      |      |      | ICU Level of Service |      |      | A    |      |
| Analysis Period (min)             |      |      | 15    |      |      |      |      |                      |      |      |      |      |
| c Critical Lane Group             |      |      |       |      |      |      |      |                      |      |      |      |      |

# HCM Signalized Intersection Capacity Analysis

6484: Capitol & 28th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|-------|------|------|------|------|
| Lane Configurations    |      | ↕    |      | ↖    | ↗     |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      | 4.0  | 4.0   |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00 |      | 1.00 | 1.00  |      |      | 1.00  |      |      | 1.00 |      |
| Frt                    |      | 1.00 |      | 1.00 | 0.98  |      |      | 0.93  |      |      | 0.99 |      |
| Flt Protected          |      | 1.00 |      | 0.95 | 1.00  |      |      | 0.99  |      |      | 0.98 |      |
| Satd. Flow (prot)      |      | 1664 |      | 1770 | 1651  |      |      | 1556  |      |      | 1635 |      |
| Flt Permitted          |      | 0.96 |      | 0.60 | 1.00  |      |      | 0.94  |      |      | 0.80 |      |
| Satd. Flow (perm)      |      | 1610 |      | 1115 | 1651  |      |      | 1466  |      |      | 1324 |      |
| Volume (vph)           | 17   | 226  | 8    | 76   | 441   | 50   | 46   | 124   | 159  | 81   | 130  | 12   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 17   | 226  | 8    | 76   | 441   | 50   | 46   | 124   | 159  | 81   | 130  | 12   |
| RTOR Reduction (vph)   | 0    | 1    | 0    | 0    | 6     | 0    | 0    | 48    | 0    | 0    | 3    | 0    |
| Lane Group Flow (vph)  | 0    | 250  | 0    | 76   | 485   | 0    | 0    | 281   | 0    | 0    | 220  | 0    |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      |      | Perm |       |      | Perm |       |      | Perm |      |      |
| Protected Phases       |      | 4    |      |      | 8     |      |      | 2     |      |      | 6    |      |
| Permitted Phases       | 4    |      |      | 8    |       |      | 2    |       |      | 6    |      |      |
| Actuated Green, G (s)  |      | 37.0 |      | 37.0 | 37.0  |      |      | 27.0  |      |      | 27.0 |      |
| Effective Green, g (s) |      | 36.0 |      | 36.0 | 36.0  |      |      | 26.0  |      |      | 26.0 |      |
| Actuated g/C Ratio     |      | 0.51 |      | 0.51 | 0.51  |      |      | 0.37  |      |      | 0.37 |      |
| Clearance Time (s)     |      | 3.0  |      | 3.0  | 3.0   |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 828  |      | 573  | 849   |      |      | 545   |      |      | 492  |      |
| v/s Ratio Prot         |      |      |      |      | c0.29 |      |      |       |      |      |      |      |
| v/s Ratio Perm         |      | 0.15 |      | 0.07 |       |      |      | c0.19 |      |      | 0.17 |      |
| v/c Ratio              |      | 0.30 |      | 0.13 | 0.57  |      |      | 0.51  |      |      | 0.45 |      |
| Uniform Delay, d1      |      | 9.8  |      | 8.9  | 11.7  |      |      | 17.1  |      |      | 16.6 |      |
| Progression Factor     |      | 1.00 |      | 0.51 | 0.46  |      |      | 1.01  |      |      | 0.86 |      |
| Incremental Delay, d2  |      | 0.9  |      | 0.5  | 2.6   |      |      | 3.3   |      |      | 2.7  |      |
| Delay (s)              |      | 10.7 |      | 5.0  | 8.0   |      |      | 20.6  |      |      | 17.0 |      |
| Level of Service       |      | B    |      | A    | A     |      |      | C     |      |      | B    |      |
| Approach Delay (s)     |      | 10.7 |      |      | 7.6   |      |      | 20.6  |      |      | 17.0 |      |
| Approach LOS           |      | B    |      |      | A     |      |      | C     |      |      | B    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 12.8  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.55  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 63.4% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
6485: N Street & 28th Street

6/1/2005



| Movement                          | EBL   | EBT  | EBR  | WBL                  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL   | SBT  | SBR  |
|-----------------------------------|-------|------|------|----------------------|------|------|------|------|------|-------|------|------|
| Lane Configurations               |       | ↔    |      |                      | ↔    |      |      | ↔    |      |       | ↔    |      |
| Ideal Flow (vphpl)                | 1900  | 1900 | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)               |       | 4.0  |      |                      | 4.0  |      |      | 4.0  |      |       | 4.0  |      |
| Lane Util. Factor                 |       | 0.95 |      |                      | 1.00 |      |      | 1.00 |      |       | 1.00 |      |
| Frt                               |       | 1.00 |      |                      | 0.89 |      |      | 0.95 |      |       | 1.00 |      |
| Flt Protected                     |       | 0.99 |      |                      | 0.99 |      |      | 1.00 |      |       | 0.97 |      |
| Satd. Flow (prot)                 |       | 3335 |      |                      | 1473 |      |      | 1597 |      |       | 1623 |      |
| Flt Permitted                     |       | 0.90 |      |                      | 0.92 |      |      | 1.00 |      |       | 0.77 |      |
| Satd. Flow (perm)                 |       | 3022 |      |                      | 1360 |      |      | 1597 |      |       | 1297 |      |
| Volume (vph)                      | 42    | 316  | 6    | 38                   | 0    | 218  | 0    | 88   | 48   | 82    | 42   | 0    |
| Peak-hour factor, PHF             | 1.00  | 1.00 | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 42    | 316  | 6    | 38                   | 0    | 218  | 0    | 88   | 48   | 82    | 42   | 0    |
| RTOR Reduction (vph)              | 0     | 2    | 0    | 0                    | 118  | 0    | 0    | 27   | 0    | 0     | 0    | 0    |
| Lane Group Flow (vph)             | 0     | 362  | 0    | 0                    | 138  | 0    | 0    | 109  | 0    | 0     | 124  | 0    |
| Parking (#/hr)                    | 0     | 0    | 0    | 0                    | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    |
| Turn Type                         | Perm  |      |      | Perm                 |      |      | Perm |      |      | Perm  |      |      |
| Protected Phases                  | 2     |      |      | 6                    |      |      | 8    |      |      | 4     |      |      |
| Permitted Phases                  | 2     |      |      | 6                    |      |      | 4    |      |      |       |      |      |
| Actuated Green, G (s)             | 33.0  |      |      | 33.0                 |      |      | 31.0 |      |      | 31.0  |      |      |
| Effective Green, g (s)            | 32.0  |      |      | 32.0                 |      |      | 30.0 |      |      | 30.0  |      |      |
| Actuated g/C Ratio                | 0.46  |      |      | 0.46                 |      |      | 0.43 |      |      | 0.43  |      |      |
| Clearance Time (s)                | 3.0   |      |      | 3.0                  |      |      | 3.0  |      |      | 3.0   |      |      |
| Lane Grp Cap (vph)                | 1381  |      |      | 622                  |      |      | 684  |      |      | 556   |      |      |
| v/s Ratio Prot                    |       |      |      |                      |      |      | 0.07 |      |      |       |      |      |
| v/s Ratio Perm                    | c0.12 |      |      | 0.10                 |      |      |      |      |      | c0.10 |      |      |
| v/c Ratio                         | 0.26  |      |      | 0.22                 |      |      | 0.16 |      |      | 0.22  |      |      |
| Uniform Delay, d1                 | 11.7  |      |      | 11.5                 |      |      | 12.3 |      |      | 12.6  |      |      |
| Progression Factor                | 1.00  |      |      | 1.57                 |      |      | 1.00 |      |      | 0.67  |      |      |
| Incremental Delay, d2             | 0.5   |      |      | 0.7                  |      |      | 0.5  |      |      | 0.9   |      |      |
| Delay (s)                         | 12.2  |      |      | 18.7                 |      |      | 12.8 |      |      | 9.3   |      |      |
| Level of Service                  | B     |      |      | B                    |      |      | B    |      |      | A     |      |      |
| Approach Delay (s)                | 12.2  |      |      | 18.7                 |      |      | 12.8 |      |      | 9.3   |      |      |
| Approach LOS                      | B     |      |      | B                    |      |      | B    |      |      | A     |      |      |
| <b>Intersection Summary</b>       |       |      |      |                      |      |      |      |      |      |       |      |      |
| HCM Average Control Delay         | 13.8  |      |      | HCM Level of Service |      |      | B    |      |      |       |      |      |
| HCM Volume to Capacity ratio      | 0.24  |      |      |                      |      |      |      |      |      |       |      |      |
| Actuated Cycle Length (s)         | 70.0  |      |      | Sum of lost time (s) |      |      | 8.0  |      |      |       |      |      |
| Intersection Capacity Utilization | 53.3% |      |      | ICU Level of Service |      |      | A    |      |      |       |      |      |
| Analysis Period (min)             | 15    |      |      |                      |      |      |      |      |      |       |      |      |
| c Critical Lane Group             |       |      |      |                      |      |      |      |      |      |       |      |      |



HCM Signalized Intersection Capacity Analysis  
6511: K Street & Alhambra

6/1/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|-------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations    |      | ↕     | ↗    |      | ↕    |      |      | ↕↗   |      |      | ↕↗    |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      | 4.0   | 4.0  |      | 4.0  |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor      |      | 1.00  | 1.00 |      | 1.00 |      |      | 0.95 |      |      | 0.95  |      |
| Frt                    |      | 1.00  | 0.85 |      | 0.99 |      |      | 0.99 |      |      | 0.96  |      |
| Flt Protected          |      | 0.97  | 1.00 |      | 0.99 |      |      | 0.99 |      |      | 1.00  |      |
| Satd. Flow (prot)      |      | 1803  | 1583 |      | 1822 |      |      | 3452 |      |      | 3406  |      |
| Flt Permitted          |      | 0.80  | 1.00 |      | 0.93 |      |      | 0.58 |      |      | 0.95  |      |
| Satd. Flow (perm)      |      | 1484  | 1583 |      | 1714 |      |      | 2020 |      |      | 3251  |      |
| Volume (vph)           | 69   | 35    | 114  | 25   | 61   | 6    | 131  | 309  | 36   | 3    | 800   | 267  |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 69   | 35    | 114  | 25   | 61   | 6    | 131  | 309  | 36   | 3    | 800   | 267  |
| RTOR Reduction (vph)   | 0    | 0     | 75   | 0    | 3    | 0    | 0    | 9    | 0    | 0    | 46    | 0    |
| Lane Group Flow (vph)  | 0    | 104   | 39   | 0    | 89   | 0    | 0    | 467  | 0    | 0    | 1024  | 0    |
| Turn Type              | Perm |       | Perm | Perm |      |      | Perm |      |      | Perm |       |      |
| Protected Phases       |      | 4     |      |      | 8    |      |      | 2    |      |      |       | 6    |
| Permitted Phases       | 4    |       | 4    | 8    |      |      | 2    |      |      | 6    |       |      |
| Actuated Green, G (s)  |      | 25.0  | 25.0 |      | 25.0 |      |      | 39.0 |      |      | 39.0  |      |
| Effective Green, g (s) |      | 24.0  | 24.0 |      | 24.0 |      |      | 38.0 |      |      | 38.0  |      |
| Actuated g/C Ratio     |      | 0.34  | 0.34 |      | 0.34 |      |      | 0.54 |      |      | 0.54  |      |
| Clearance Time (s)     |      | 3.0   | 3.0  |      | 3.0  |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)     |      | 509   | 543  |      | 588  |      |      | 1097 |      |      | 1765  |      |
| v/s Ratio Prot         |      |       |      |      |      |      |      |      |      |      |       |      |
| v/s Ratio Perm         |      | c0.07 | 0.02 |      | 0.05 |      |      | 0.23 |      |      | c0.31 |      |
| v/c Ratio              |      | 0.20  | 0.07 |      | 0.15 |      |      | 0.43 |      |      | 0.58  |      |
| Uniform Delay, d1      |      | 16.3  | 15.5 |      | 15.9 |      |      | 9.5  |      |      | 10.7  |      |
| Progression Factor     |      | 1.02  | 2.09 |      | 1.00 |      |      | 0.41 |      |      | 0.59  |      |
| Incremental Delay, d2  |      | 0.9   | 0.2  |      | 0.5  |      |      | 1.0  |      |      | 1.0   |      |
| Delay (s)              |      | 17.5  | 32.7 |      | 16.5 |      |      | 4.9  |      |      | 7.3   |      |
| Level of Service       |      | B     | C    |      | B    |      |      | A    |      |      | A     |      |
| Approach Delay (s)     |      | 25.4  |      |      | 16.5 |      |      | 4.9  |      |      | 7.3   |      |
| Approach LOS           |      | C     |      |      | B    |      |      | A    |      |      | A     |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 9.3   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.43  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 66.4% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 9622: K Street & 30th Street

6/1/2005



| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations       | ↖    | ↑    |      |      | ↑     | ↗    |      | ↕    |      |      |      |      |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       | 4.0  | 4.0  |      |      | 4.0   | 4.0  |      | 4.0  |      |      |      |      |
| Lane Util. Factor         | 1.00 | 1.00 |      |      | 1.00  | 1.00 |      | 0.91 |      |      |      |      |
| Fr <sub>t</sub>           | 1.00 | 1.00 |      |      | 1.00  | 0.85 |      | 0.98 |      |      |      |      |
| Fl <sub>t</sub> Protected | 0.95 | 1.00 |      |      | 1.00  | 1.00 |      | 0.98 |      |      |      |      |
| Satd. Flow (prot)         | 1770 | 1863 |      |      | 1863  | 1583 |      | 4905 |      |      |      |      |
| Fl <sub>t</sub> Permitted | 0.48 | 1.00 |      |      | 1.00  | 1.00 |      | 0.98 |      |      |      |      |
| Satd. Flow (perm)         | 891  | 1863 |      |      | 1863  | 1583 |      | 4905 |      |      |      |      |
| Volume (vph)              | 66   | 170  | 0    | 0    | 340   | 68   | 299  | 512  | 125  | 0    | 0    | 0    |
| Peak-hour factor, PHF     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 66   | 170  | 0    | 0    | 340   | 68   | 299  | 512  | 125  | 0    | 0    | 0    |
| RTOR Reduction (vph)      | 0    | 0    | 0    | 0    | 0     | 36   | 0    | 29   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)     | 66   | 170  | 0    | 0    | 340   | 32   | 0    | 907  | 0    | 0    | 0    | 0    |
| Turn Type                 | Perm |      |      | Perm |       |      | Perm |      |      |      |      |      |
| Protected Phases          |      | 4    |      |      | 8     |      |      | 2    |      |      |      |      |
| Permitted Phases          | 4    |      |      |      |       | 8    | 2    |      |      |      |      |      |
| Actuated Green, G (s)     | 34.0 | 34.0 |      |      | 34.0  | 34.0 |      | 30.0 |      |      |      |      |
| Effective Green, g (s)    | 33.0 | 33.0 |      |      | 33.0  | 33.0 |      | 29.0 |      |      |      |      |
| Actuated g/C Ratio        | 0.47 | 0.47 |      |      | 0.47  | 0.47 |      | 0.41 |      |      |      |      |
| Clearance Time (s)        | 3.0  | 3.0  |      |      | 3.0   | 3.0  |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)        | 420  | 878  |      |      | 878   | 746  |      | 2032 |      |      |      |      |
| v/s Ratio Prot            |      | 0.09 |      |      | c0.18 |      |      |      |      |      |      |      |
| v/s Ratio Perm            | 0.07 |      |      |      |       | 0.02 |      | 0.18 |      |      |      |      |
| v/c Ratio                 | 0.16 | 0.19 |      |      | 0.39  | 0.04 |      | 0.45 |      |      |      |      |
| Uniform Delay, d1         | 10.6 | 10.8 |      |      | 12.0  | 10.0 |      | 14.7 |      |      |      |      |
| Progression Factor        | 0.99 | 0.95 |      |      | 0.66  | 0.51 |      | 0.33 |      |      |      |      |
| Incremental Delay, d2     | 0.8  | 0.5  |      |      | 1.1   | 0.1  |      | 0.7  |      |      |      |      |
| Delay (s)                 | 11.2 | 10.7 |      |      | 9.1   | 5.2  |      | 5.5  |      |      |      |      |
| Level of Service          | B    | B    |      |      | A     | A    |      | A    |      |      |      |      |
| Approach Delay (s)        |      | 10.9 |      |      | 8.4   |      |      | 5.5  |      |      | 0.0  |      |
| Approach LOS              |      | B    |      |      | A     |      |      | A    |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 7.0   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.41  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 57.3% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

EXISTING PLUS SUTTER PROJECT WITH SMART PLAN

PM Peak Hour

Signalized Intersections

(pm2)



HCM Signalized Intersection Capacity Analysis  
 2004: L Street & 21th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      |      | ↑↑    |      |      | ↑↑↑  |      |      |      |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0   |      |      | 4.0  |      |      |      |      |
| Lane Util. Factor      |      |      |      |      | 0.95  |      |      | 0.91 |      |      |      |      |
| Flt                    |      |      |      |      | 0.98  |      |      | 1.00 |      |      |      |      |
| Flt Protected          |      |      |      |      | 1.00  |      |      | 0.99 |      |      |      |      |
| Satd. Flow (prot)      |      |      |      |      | 3305  |      |      | 4887 |      |      |      |      |
| Flt Permitted          |      |      |      |      | 1.00  |      |      | 0.99 |      |      |      |      |
| Satd. Flow (perm)      |      |      |      |      | 3305  |      |      | 4887 |      |      |      |      |
| Volume (vph)           | 0    | 0    | 0    | 0    | 615   | 79   | 165  | 1225 | 0    | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 0    | 615   | 79   | 165  | 1225 | 0    | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 15    | 0    | 0    | 35   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 679   | 0    | 0    | 1355 | 0    | 0    | 0    | 0    |
| Parking (#/hr)         | 0    | 0    |      |      | 0     | 0    | 0    | 0    | 0    |      |      |      |
| Turn Type              |      |      |      |      |       |      |      | Perm |      |      |      |      |
| Protected Phases       |      |      |      |      | 6     |      |      | 8    |      |      |      |      |
| Permitted Phases       |      |      |      |      |       |      | 8    |      |      |      |      |      |
| Actuated Green, G (s)  |      |      |      |      | 21.0  |      |      | 23.0 |      |      |      |      |
| Effective Green, g (s) |      |      |      |      | 20.0  |      |      | 22.0 |      |      |      |      |
| Actuated g/C Ratio     |      |      |      |      | 0.40  |      |      | 0.44 |      |      |      |      |
| Clearance Time (s)     |      |      |      |      | 3.0   |      |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)     |      |      |      |      | 1322  |      |      | 2150 |      |      |      |      |
| v/s Ratio Prot         |      |      |      |      | c0.21 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      |      |      |       |      |      | 0.28 |      |      |      |      |
| v/c Ratio              |      |      |      |      | 0.51  |      |      | 0.63 |      |      |      |      |
| Uniform Delay, d1      |      |      |      |      | 11.3  |      |      | 10.8 |      |      |      |      |
| Progression Factor     |      |      |      |      | 0.36  |      |      | 1.00 |      |      |      |      |
| Incremental Delay, d2  |      |      |      |      | 1.3   |      |      | 1.4  |      |      |      |      |
| Delay (s)              |      |      |      |      | 5.4   |      |      | 12.3 |      |      |      |      |
| Level of Service       |      |      |      |      | A     |      |      | B    |      |      |      |      |
| Approach Delay (s)     |      | 0.0  |      |      | 5.4   |      |      | 12.3 |      |      | 0.0  |      |
| Approach LOS           |      | A    |      |      | A     |      |      | B    |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.0  | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.57  |                      |     |
| Actuated Cycle Length (s)         | 50.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 53.2% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

# HCM Signalized Intersection Capacity Analysis

2012: J Street & 21th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations    |      | ↑↑↑  |      |      |      |      |      | ↑↑↑   |      |      |      |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      |      |      |      |      | 4.0   |      |      |      |      |
| Lane Util. Factor      |      | 0.91 |      |      |      |      |      | 0.91  |      |      |      |      |
| Frt                    |      | 1.00 |      |      |      |      |      | 0.97  |      |      |      |      |
| Flt Protected          |      | 1.00 |      |      |      |      |      | 1.00  |      |      |      |      |
| Satd. Flow (prot)      |      | 4899 |      |      |      |      |      | 4770  |      |      |      |      |
| Flt Permitted          |      | 1.00 |      |      |      |      |      | 1.00  |      |      |      |      |
| Satd. Flow (perm)      |      | 4899 |      |      |      |      |      | 4770  |      |      |      |      |
| Volume (vph)           | 101  | 1401 | 0    | 0    | 0    | 0    | 0    | 1075  | 264  | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 101  | 1401 | 0    | 0    | 0    | 0    | 0    | 1075  | 264  | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0    | 16   | 0    | 0    | 0    | 0    | 0    | 8     | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 1486 | 0    | 0    | 0    | 0    | 0    | 1331  | 0    | 0    | 0    | 0    |
| Parking (#/hr)         | 0    | 0    |      |      |      |      |      | 0     | 0    |      |      |      |
| Turn Type              | Perm |      |      |      |      |      |      |       |      |      |      |      |
| Protected Phases       |      | 2    |      |      |      |      |      | 8     |      |      |      |      |
| Permitted Phases       | 2    |      |      |      |      |      |      |       |      |      |      |      |
| Actuated Green, G (s)  |      | 23.0 |      |      |      |      |      | 21.0  |      |      |      |      |
| Effective Green, g (s) |      | 22.0 |      |      |      |      |      | 20.0  |      |      |      |      |
| Actuated g/C Ratio     |      | 0.44 |      |      |      |      |      | 0.40  |      |      |      |      |
| Clearance Time (s)     |      | 3.0  |      |      |      |      |      | 3.0   |      |      |      |      |
| Lane Grp Cap (vph)     |      | 2156 |      |      |      |      |      | 1908  |      |      |      |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      | c0.28 |      |      |      |      |
| v/s Ratio Perm         |      | 0.30 |      |      |      |      |      |       |      |      |      |      |
| v/c Ratio              |      | 0.69 |      |      |      |      |      | 0.70  |      |      |      |      |
| Uniform Delay, d1      |      | 11.3 |      |      |      |      |      | 12.5  |      |      |      |      |
| Progression Factor     |      | 0.47 |      |      |      |      |      | 0.29  |      |      |      |      |
| Incremental Delay, d2  |      | 1.5  |      |      |      |      |      | 1.7   |      |      |      |      |
| Delay (s)              |      | 6.8  |      |      |      |      |      | 5.3   |      |      |      |      |
| Level of Service       |      | A    |      |      |      |      |      | A     |      |      |      |      |
| Approach Delay (s)     |      | 6.8  |      |      | 0.0  |      |      | 5.3   |      |      | 0.0  |      |
| Approach LOS           |      | A    |      |      | A    |      |      | A     |      |      | A    |      |

## Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 6.1   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.69  |                      |     |
| Actuated Cycle Length (s)         | 50.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 62.4% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

# HCM Signalized Intersection Capacity Analysis

2074: J Street & 19th Street

6/1/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|-------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑↑↑   |      |      |      |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      |      |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 0.91  |      |      |      |      |      |      |      |      | 0.91 |      |
| Frt                    |      | 0.97  |      |      |      |      |      |      |      |      | 1.00 |      |
| Flt Protected          |      | 1.00  |      |      |      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (prot)      |      | 4783  |      |      |      |      |      |      |      |      | 4848 |      |
| Flt Permitted          |      | 1.00  |      |      |      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (perm)      |      | 4783  |      |      |      |      |      |      |      |      | 4848 |      |
| Volume (vph)           | 0    | 1288  | 283  | 0    | 0    | 0    | 0    | 0    | 0    | 166  | 425  | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 1288  | 283  | 0    | 0    | 0    | 0    | 0    | 0    | 166  | 425  | 0    |
| RTOR Reduction (vph)   | 0    | 70    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 22   | 0    |
| Lane Group Flow (vph)  | 0    | 1501  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 569  | 0    |
| Parking (#/hr)         |      | 0     | 0    |      |      |      |      |      |      | 0    | 0    |      |
| Turn Type              |      |       |      |      |      |      |      |      |      | Perm |      |      |
| Protected Phases       |      | 2     |      |      |      |      |      |      |      |      |      | 4    |
| Permitted Phases       |      |       |      |      |      |      |      |      |      | 4    |      |      |
| Actuated Green, G (s)  |      | 26.0  |      |      |      |      |      |      |      |      |      | 18.0 |
| Effective Green, g (s) |      | 25.0  |      |      |      |      |      |      |      |      |      | 17.0 |
| Actuated g/C Ratio     |      | 0.50  |      |      |      |      |      |      |      |      |      | 0.34 |
| Clearance Time (s)     |      | 3.0   |      |      |      |      |      |      |      |      |      | 3.0  |
| Lane Grp Cap (vph)     |      | 2392  |      |      |      |      |      |      |      |      |      | 1648 |
| v/s Ratio Prot         |      | c0.31 |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |       |      |      |      |      |      |      |      |      |      | 0.12 |
| v/c Ratio              |      | 0.63  |      |      |      |      |      |      |      |      |      | 0.34 |
| Uniform Delay, d1      |      | 9.1   |      |      |      |      |      |      |      |      |      | 12.3 |
| Progression Factor     |      | 1.00  |      |      |      |      |      |      |      |      |      | 1.00 |
| Incremental Delay, d2  |      | 1.3   |      |      |      |      |      |      |      |      |      | 0.6  |
| Delay (s)              |      | 10.4  |      |      |      |      |      |      |      |      |      | 12.9 |
| Level of Service       |      | B     |      |      |      |      |      |      |      |      |      | B    |
| Approach Delay (s)     |      | 10.4  |      |      | 0.0  |      |      | 0.0  |      |      |      | 12.9 |
| Approach LOS           |      | B     |      |      | A    |      |      | A    |      |      |      | B    |

## Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.1  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.51  |                      |     |
| Actuated Cycle Length (s)         | 50.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 49.4% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 2088: L Street & 29th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL   | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|------|------|-------|------|------|------|------|------|------|-------|------|
| Lane Configurations    |      |      |      | ↘     | ↗    |      |      |      |      |      | ↗     | ↘    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      |      |      | 4.0   | 4.0  |      |      |      |      |      | 4.0   | 4.0  |
| Lane Util. Factor      |      |      |      | 1.00  | 0.95 |      |      |      |      |      | 0.86  | 0.86 |
| Frt                    |      |      |      | 1.00  | 1.00 |      |      |      |      |      | 1.00  | 0.85 |
| Flt Protected          |      |      |      | 0.95  | 1.00 |      |      |      |      |      | 1.00  | 1.00 |
| Satd. Flow (prot)      |      |      |      | 1770  | 3539 |      |      |      |      |      | 4646  | 1226 |
| Flt Permitted          |      |      |      | 0.95  | 1.00 |      |      |      |      |      | 1.00  | 1.00 |
| Satd. Flow (perm)      |      |      |      | 1770  | 3539 |      |      |      |      |      | 4646  | 1226 |
| Volume (vph)           | 0    | 0    | 0    | 253   | 459  | 0    | 0    | 0    | 0    | 0    | 1220  | 142  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 253   | 459  | 0    | 0    | 0    | 0    | 0    | 1220  | 142  |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 22    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 73   |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 231   | 459  | 0    | 0    | 0    | 0    | 0    | 1220  | 69   |
| Parking (#/hr)         |      |      | 0    |       |      |      |      |      |      |      | 0     | 0    |
| Turn Type              |      |      |      | Perm  |      |      |      |      |      |      |       | Perm |
| Protected Phases       |      |      |      |       | 6    |      |      |      |      |      |       | 4    |
| Permitted Phases       |      |      |      | 6     |      |      |      |      |      |      |       | 4    |
| Actuated Green, G (s)  |      |      |      | 29.0  | 29.0 |      |      |      |      |      | 35.0  | 35.0 |
| Effective Green, g (s) |      |      |      | 28.0  | 28.0 |      |      |      |      |      | 34.0  | 34.0 |
| Actuated g/C Ratio     |      |      |      | 0.40  | 0.40 |      |      |      |      |      | 0.49  | 0.49 |
| Clearance Time (s)     |      |      |      | 3.0   | 3.0  |      |      |      |      |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)     |      |      |      | 708   | 1416 |      |      |      |      |      | 2257  | 595  |
| v/s Ratio Prot         |      |      |      |       | 0.13 |      |      |      |      |      | c0.26 |      |
| v/s Ratio Perm         |      |      |      | c0.13 |      |      |      |      |      |      |       | 0.06 |
| v/c Ratio              |      |      |      | 0.33  | 0.32 |      |      |      |      |      | 0.54  | 0.12 |
| Uniform Delay, d1      |      |      |      | 14.5  | 14.5 |      |      |      |      |      | 12.6  | 9.8  |
| Progression Factor     |      |      |      | 0.59  | 0.65 |      |      |      |      |      | 1.19  | 3.27 |
| Incremental Delay, d2  |      |      |      | 1.2   | 0.6  |      |      |      |      |      | 0.8   | 0.3  |
| Delay (s)              |      |      |      | 9.7   | 10.0 |      |      |      |      |      | 15.8  | 32.4 |
| Level of Service       |      |      |      | A     | B    |      |      |      |      |      | B     | C    |
| Approach Delay (s)     |      | 0.0  |      |       | 9.9  |      |      | 0.0  |      |      | 17.5  |      |
| Approach LOS           |      | A    |      |       | A    |      |      | A    |      |      | B     |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 14.9  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.44  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 45.3% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
 2239: L Street & Alhambra

6/1/2005



| Movement                          | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations               |      |      |      |      | ↕    |      |      | ↕    |      |      | ↕    | ↕    |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      |      |      |      | 4.0  |      |      | 4.0  |      |      | 4.0  | 4.0  |
| Lane Util. Factor                 |      |      |      |      | 1.00 |      |      | 1.00 |      |      | 1.00 | 1.00 |
| Fr <sub>t</sub>                   |      |      |      |      | 0.97 |      |      | 0.99 |      |      | 1.00 | 0.85 |
| Fl <sub>t</sub> Protected         |      |      |      |      | 0.99 |      |      | 0.99 |      |      | 1.00 | 1.00 |
| Satd. Flow (prot)                 |      |      |      |      | 1615 |      |      | 1643 |      |      | 1857 | 1425 |
| Fl <sub>t</sub> Permitted         |      |      |      |      | 0.99 |      |      | 0.83 |      |      | 0.94 | 1.00 |
| Satd. Flow (perm)                 |      |      |      |      | 1615 |      |      | 1376 |      |      | 1758 | 1425 |
| Volume (vph)                      | 0    | 0    | 0    | 31   | 159  | 56   | 83   | 513  | 67   | 42   | 657  | 298  |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0    | 31   | 159  | 56   | 83   | 513  | 67   | 42   | 657  | 298  |
| RTOR Reduction (vph)              | 0    | 0    | 0    | 0    | 15   | 0    | 0    | 6    | 0    | 0    | 0    | 106  |
| Lane Group Flow (vph)             | 0    | 0    | 0    | 0    | 231  | 0    | 0    | 657  | 0    | 0    | 699  | 192  |
| Parking (#/hr)                    |      |      |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Turn Type                         |      |      |      |      | Perm |      |      | Perm |      |      | Perm | Perm |
| Protected Phases                  |      |      |      |      | 6    |      |      | 8    |      |      | 4    | 4    |
| Permitted Phases                  |      |      |      |      | 6    |      |      | 8    |      |      | 4    | 4    |
| Actuated Green, G (s)             |      |      |      |      | 18.0 |      |      | 46.0 |      |      | 46.0 | 46.0 |
| Effective Green, g (s)            |      |      |      |      | 17.0 |      |      | 45.0 |      |      | 45.0 | 45.0 |
| Actuated g/C Ratio                |      |      |      |      | 0.24 |      |      | 0.64 |      |      | 0.64 | 0.64 |
| Clearance Time (s)                |      |      |      |      | 3.0  |      |      | 3.0  |      |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)                |      |      |      |      | 392  |      |      | 885  |      |      | 1130 | 916  |
| v/s Ratio Prot                    |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm                    |      |      |      |      | 0.14 |      |      | 0.48 |      |      | 0.40 | 0.13 |
| v/c Ratio                         |      |      |      |      | 0.59 |      |      | 0.74 |      |      | 0.62 | 0.21 |
| Uniform Delay, d <sub>1</sub>     |      |      |      |      | 23.4 |      |      | 8.5  |      |      | 7.4  | 5.2  |
| Progression Factor                |      |      |      |      | 1.00 |      |      | 0.40 |      |      | 0.85 | 1.78 |
| Incremental Delay, d <sub>2</sub> |      |      |      |      | 6.4  |      |      | 3.1  |      |      | 2.2  | 0.4  |
| Delay (s)                         |      |      |      |      | 29.8 |      |      | 6.5  |      |      | 8.6  | 9.6  |
| Level of Service                  |      |      |      |      | C    |      |      | A    |      |      | A    | A    |
| Approach Delay (s)                |      | 0.0  |      |      | 29.8 |      |      | 6.5  |      |      | 8.9  |      |
| Approach LOS                      |      | A    |      |      | C    |      |      | A    |      |      | A    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.7  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.70  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 96.0% | ICU Level of Service | F   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3426: L Street & 19th Street

6/1/2005



| Movement                          | EBL                 | EBT  | EBR   | WBL  | WBT  | WBR  | NBL  | NBT                  | NBR  | SBL  | SBT   | SBR  |
|-----------------------------------|---------------------|------|-------|------|------|------|------|----------------------|------|------|-------|------|
| Lane Configurations               |                     |      |       |      | ↕↕   |      |      |                      |      |      | ↕↕↕   |      |
| Ideal Flow (vphpl)                | 1900                | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900                 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)               |                     |      |       |      | 4.0  |      |      |                      |      |      | 4.0   |      |
| Lane Util. Factor                 |                     |      |       |      | 0.95 |      |      |                      |      |      | 0.91  |      |
| Frt                               |                     |      |       |      | 1.00 |      |      |                      |      |      | 0.99  |      |
| Flt Protected                     |                     |      |       |      | 0.99 |      |      |                      |      |      | 1.00  |      |
| Satd. Flow (prot)                 |                     |      |       |      | 3331 |      |      |                      |      |      | 4887  |      |
| Flt Permitted                     |                     |      |       |      | 0.99 |      |      |                      |      |      | 1.00  |      |
| Satd. Flow (perm)                 |                     |      |       |      | 3331 |      |      |                      |      |      | 4887  |      |
| Volume (vph)                      | 0                   | 0    | 0     | 150  | 658  | 0    | 0    | 0                    | 0    | 0    | 918   | 37   |
| Peak-hour factor, PHF             | 1.00                | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)                   | 0                   | 0    | 0     | 150  | 658  | 0    | 0    | 0                    | 0    | 0    | 918   | 37   |
| RTOR Reduction (vph)              | 0                   | 0    | 0     | 0    | 23   | 0    | 0    | 0                    | 0    | 0    | 9     | 0    |
| Lane Group Flow (vph)             | 0                   | 0    | 0     | 0    | 785  | 0    | 0    | 0                    | 0    | 0    | 946   | 0    |
| Parking (#/hr)                    |                     | 0    | 0     | 0    | 0    |      |      |                      |      | 0    | 0     | 0    |
| Turn Type                         |                     |      |       |      | Perm |      |      |                      |      |      |       |      |
| Protected Phases                  |                     |      |       |      | 6    |      |      |                      |      |      | 4     |      |
| Permitted Phases                  |                     |      |       |      | 6    |      |      |                      |      |      |       |      |
| Actuated Green, G (s)             |                     |      |       |      | 24.0 |      |      |                      |      |      | 20.0  |      |
| Effective Green, g (s)            |                     |      |       |      | 23.0 |      |      |                      |      |      | 19.0  |      |
| Actuated g/C Ratio                |                     |      |       |      | 0.46 |      |      |                      |      |      | 0.38  |      |
| Clearance Time (s)                |                     |      |       |      | 3.0  |      |      |                      |      |      | 3.0   |      |
| Lane Grp Cap (vph)                |                     |      |       |      | 1532 |      |      |                      |      |      | 1857  |      |
| v/s Ratio Prot                    |                     |      |       |      |      |      |      |                      |      |      | c0.19 |      |
| v/s Ratio Perm                    |                     |      |       |      | 0.24 |      |      |                      |      |      |       |      |
| v/c Ratio                         |                     |      |       |      | 0.51 |      |      |                      |      |      | 0.51  |      |
| Uniform Delay, d1                 |                     |      |       |      | 9.5  |      |      |                      |      |      | 11.9  |      |
| Progression Factor                |                     |      |       |      | 0.37 |      |      |                      |      |      | 0.74  |      |
| Incremental Delay, d2             |                     |      |       |      | 1.1  |      |      |                      |      |      | 1.0   |      |
| Delay (s)                         |                     |      |       |      | 4.6  |      |      |                      |      |      | 9.8   |      |
| Level of Service                  |                     |      |       |      | A    |      |      |                      |      |      | A     |      |
| Approach Delay (s)                |                     | 0.0  |       |      | 4.6  |      |      | 0.0                  |      |      | 9.8   |      |
| Approach LOS                      |                     | A    |       |      | A    |      |      | A                    |      |      | A     |      |
| <b>Intersection Summary</b>       |                     |      |       |      |      |      |      |                      |      |      |       |      |
| HCM Average Control Delay         |                     |      | 7.4   |      |      |      |      | HCM Level of Service |      |      | A     |      |
| HCM Volume to Capacity ratio      |                     |      | 0.51  |      |      |      |      |                      |      |      |       |      |
| Actuated Cycle Length (s)         |                     |      | 50.0  |      |      |      |      | Sum of lost time (s) |      |      | 8.0   |      |
| Intersection Capacity Utilization |                     |      | 47.8% |      |      |      |      | ICU Level of Service |      |      | A     |      |
| Analysis Period (min)             |                     |      | 15    |      |      |      |      |                      |      |      |       |      |
| c                                 | Critical Lane Group |      |       |      |      |      |      |                      |      |      |       |      |

# HCM Signalized Intersection Capacity Analysis

3427: L Street & 26th St

6/1/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT  | WBR  | NBL  | NBT                  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|-------|------|------|------|------|----------------------|------|------|------|------|
| Lane Configurations               |      |      |       |      | ↕    |      |      | ↕                    |      |      | ↕    |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      |      |       |      | 4.0  |      |      | 4.0                  |      |      | 4.0  |      |
| Lane Util. Factor                 |      |      |       |      | 0.95 |      |      | 1.00                 |      |      | 1.00 |      |
| Frt                               |      |      |       |      | 0.98 |      |      | 1.00                 |      |      | 0.96 |      |
| Flt Protected                     |      |      |       |      | 1.00 |      |      | 0.98                 |      |      | 1.00 |      |
| Satd. Flow (prot)                 |      |      |       |      | 3303 |      |      | 1649                 |      |      | 1609 |      |
| Flt Permitted                     |      |      |       |      | 1.00 |      |      | 0.92                 |      |      | 1.00 |      |
| Satd. Flow (perm)                 |      |      |       |      | 3303 |      |      | 1543                 |      |      | 1609 |      |
| Volume (vph)                      | 0    | 0    | 0     | 14   | 574  | 73   | 27   | 55                   | 0    | 0    | 68   | 29   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 14   | 574  | 73   | 27   | 55                   | 0    | 0    | 68   | 29   |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 0    | 19   | 0    | 0    | 0                    | 0    | 0    | 17   | 0    |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 0    | 642  | 0    | 0    | 82                   | 0    | 0    | 80   | 0    |
| Parking (#/hr)                    |      |      |       | 0    | 0    | 0    | 0    | 0                    |      |      | 0    | 0    |
| Turn Type                         |      |      |       | Perm |      |      | Perm |                      |      |      |      |      |
| Protected Phases                  |      |      |       |      | 8    |      |      | 2                    |      |      | 6    |      |
| Permitted Phases                  |      |      |       | 8    |      |      | 2    |                      |      |      |      |      |
| Actuated Green, G (s)             |      |      |       |      | 23.0 |      |      | 21.0                 |      |      | 21.0 |      |
| Effective Green, g (s)            |      |      |       |      | 22.0 |      |      | 20.0                 |      |      | 20.0 |      |
| Actuated g/C Ratio                |      |      |       |      | 0.44 |      |      | 0.40                 |      |      | 0.40 |      |
| Clearance Time (s)                |      |      |       |      | 3.0  |      |      | 3.0                  |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |      |      |       |      | 1453 |      |      | 617                  |      |      | 644  |      |
| v/s Ratio Prot                    |      |      |       |      |      |      |      |                      |      |      | 0.05 |      |
| v/s Ratio Perm                    |      |      |       |      | 0.19 |      |      | 0.05                 |      |      |      |      |
| v/c Ratio                         |      |      |       |      | 0.44 |      |      | 0.13                 |      |      | 0.12 |      |
| Uniform Delay, d1                 |      |      |       |      | 9.7  |      |      | 9.5                  |      |      | 9.5  |      |
| Progression Factor                |      |      |       |      | 1.00 |      |      | 0.72                 |      |      | 1.00 |      |
| Incremental Delay, d2             |      |      |       |      | 1.0  |      |      | 0.4                  |      |      | 0.4  |      |
| Delay (s)                         |      |      |       |      | 10.7 |      |      | 7.3                  |      |      | 9.9  |      |
| Level of Service                  |      |      |       |      | B    |      |      | A                    |      |      | A    |      |
| Approach Delay (s)                |      | 0.0  |       |      | 10.7 |      |      | 7.3                  |      |      | 9.9  |      |
| Approach LOS                      |      | A    |       |      | B    |      |      | A                    |      |      | A    |      |
| <b>Intersection Summary</b>       |      |      |       |      |      |      |      |                      |      |      |      |      |
| HCM Average Control Delay         |      |      | 10.3  |      |      |      |      | HCM Level of Service |      |      | B    |      |
| HCM Volume to Capacity ratio      |      |      | 0.29  |      |      |      |      |                      |      |      |      |      |
| Actuated Cycle Length (s)         |      |      | 50.0  |      |      |      |      | Sum of lost time (s) |      |      | 8.0  |      |
| Intersection Capacity Utilization |      |      | 36.3% |      |      |      |      | ICU Level of Service |      |      | A    |      |
| Analysis Period (min)             |      |      | 15    |      |      |      |      |                      |      |      |      |      |
| c Critical Lane Group             |      |      |       |      |      |      |      |                      |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
 3428: J Street & 29th St off ramp

6/1/2005



| Movement               | EBT   | EBR  | SBL   | SBT   | SWL2 | SWL  |
|------------------------|-------|------|-------|-------|------|------|
| Lane Configurations    | ↑↑↑   |      |       | ↑↑↑   |      | ↔↔   |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900  | 1900  | 1900 | 1900 |
| Total Lost time (s)    | 4.0   |      |       | 4.0   |      | 4.0  |
| Lane Util. Factor      | 0.91  |      |       | 0.91  |      | 0.97 |
| Frt                    | 0.97  |      |       | 1.00  |      | 1.00 |
| Flt Protected          | 1.00  |      |       | 0.99  |      | 0.95 |
| Satd. Flow (prot)      | 4759  |      |       | 4875  |      | 3433 |
| Flt Permitted          | 1.00  |      |       | 0.99  |      | 0.95 |
| Satd. Flow (perm)      | 4759  |      |       | 4875  |      | 3433 |
| Volume (vph)           | 1196  | 324  | 80    | 403   | 80   | 438  |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 1196  | 324  | 80    | 403   | 80   | 438  |
| RTOR Reduction (vph)   | 60    | 0    | 0     | 0     | 0    | 22   |
| Lane Group Flow (vph)  | 1460  | 0    | 0     | 483   | 0    | 496  |
| Parking (#/hr)         | 0     | 0    |       | 0     |      |      |
| Turn Type              |       |      | Split |       | Perm |      |
| Protected Phases       | 2     |      | 8     | 8     |      | 4    |
| Permitted Phases       |       |      |       |       | 4    |      |
| Actuated Green, G (s)  | 27.0  |      |       | 17.0  |      | 17.0 |
| Effective Green, g (s) | 26.0  |      |       | 16.0  |      | 16.0 |
| Actuated g/C Ratio     | 0.37  |      |       | 0.23  |      | 0.23 |
| Clearance Time (s)     | 3.0   |      |       | 3.0   |      | 3.0  |
| Lane Grp Cap (vph)     | 1768  |      |       | 1114  |      | 785  |
| v/s Ratio Prot         | c0.31 |      |       | c0.10 |      |      |
| v/s Ratio Perm         |       |      |       |       |      | 0.14 |
| v/c Ratio              | 0.83  |      |       | 0.43  |      | 0.63 |
| Uniform Delay, d1      | 19.9  |      |       | 23.1  |      | 24.3 |
| Progression Factor     | 0.42  |      |       | 1.00  |      | 1.00 |
| Incremental Delay, d2  | 3.4   |      |       | 1.2   |      | 3.8  |
| Delay (s)              | 11.9  |      |       | 24.4  |      | 28.2 |
| Level of Service       | B     |      |       | C     |      | C    |
| Approach Delay (s)     | 11.9  |      |       | 24.4  |      | 28.2 |
| Approach LOS           | B     |      |       | C     |      | C    |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 17.6  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.66  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 64.5% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

# HCM Signalized Intersection Capacity Analysis

3429: J Street & Alhambra

6/1/2005



| Movement                          | EBL   | EBT   | EBR   | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|-------|-------|-------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations               | ↖     | ↕     |       | ↖    | ↕    | ↗    |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               | 4.0   | 4.0   |       | 4.0  | 4.0  | 4.0  |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor                 | 1.00  | 0.95  |       | 0.95 | 0.95 | 1.00 |      | 0.95  |      |      | 0.95 |      |
| Fr <sub>t</sub>                   | 1.00  | 0.97  |       | 1.00 | 1.00 | 0.85 |      | 0.94  |      |      | 1.00 |      |
| Fl <sub>t</sub> Protected         | 0.95  | 1.00  |       | 0.95 | 0.95 | 1.00 |      | 1.00  |      |      | 0.99 |      |
| Satd. Flow (prot)                 | 1770  | 3246  |       | 1681 | 1681 | 1425 |      | 3173  |      |      | 3342 |      |
| Fl <sub>t</sub> Permitted         | 0.95  | 1.00  |       | 0.95 | 0.95 | 1.00 |      | 1.00  |      |      | 0.82 |      |
| Satd. Flow (perm)                 | 1770  | 3246  |       | 1681 | 1681 | 1425 |      | 3173  |      |      | 2750 |      |
| Volume (vph)                      | 158   | 812   | 243   | 477  | 0    | 238  | 0    | 285   | 171  | 52   | 367  | 0    |
| Peak-hour factor, PHF             | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 158   | 812   | 243   | 477  | 0    | 238  | 0    | 285   | 171  | 52   | 367  | 0    |
| RTOR Reduction (vph)              | 0     | 40    | 0     | 0    | 0    | 184  | 0    | 127   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 158   | 1015  | 0     | 239  | 238  | 54   | 0    | 329   | 0    | 0    | 419  | 0    |
| Parking (#/hr)                    |       | 0     | 0     |      |      | 0    |      | 0     | 0    |      | 0    |      |
| Turn Type                         | Split |       | Split |      | Perm |      |      | Perm  |      |      |      |      |
| Protected Phases                  | 2     | 2     | 6     |      | 6    | 8    |      |       | 4    |      |      |      |
| Permitted Phases                  |       |       |       |      | 6    |      |      | 4     |      |      |      |      |
| Actuated Green, G (s)             | 27.0  | 27.0  | 17.0  |      | 17.0 | 17.0 |      |       | 17.0 |      |      |      |
| Effective Green, g (s)            | 26.0  | 26.0  | 16.0  |      | 16.0 | 16.0 |      |       | 16.0 |      |      |      |
| Actuated g/C Ratio                | 0.37  | 0.37  | 0.23  |      | 0.23 | 0.23 |      |       | 0.23 |      |      |      |
| Clearance Time (s)                | 3.0   | 3.0   | 3.0   |      | 3.0  | 3.0  |      |       | 3.0  |      |      |      |
| Lane Grp Cap (vph)                | 657   | 1206  | 384   |      | 384  | 725  |      |       | 629  |      |      |      |
| v/s Ratio Prot                    | 0.09  | c0.31 | c0.14 |      | 0.14 | 0.10 |      |       |      |      |      |      |
| v/s Ratio Perm                    |       |       |       |      | 0.04 |      |      | c0.15 |      |      |      |      |
| v/c Ratio                         | 0.24  | 0.84  | 0.62  |      | 0.62 | 0.17 |      |       | 0.45 |      |      |      |
| Uniform Delay, d <sub>1</sub>     | 15.2  | 20.1  | 24.3  |      | 24.3 | 21.7 |      |       | 23.2 |      |      |      |
| Progression Factor                | 0.40  | 0.44  | 1.00  |      | 1.00 | 1.00 |      |       | 0.68 |      |      |      |
| Incremental Delay, d <sub>2</sub> | 0.8   | 6.4   | 7.4   |      | 7.3  | 1.1  |      |       | 1.9  |      |      |      |
| Delay (s)                         | 6.8   | 15.3  | 31.7  |      | 31.6 | 22.8 |      |       | 17.6 |      |      |      |
| Level of Service                  | A     | B     | C     |      | C    | C    |      |       | B    |      |      |      |
| Approach Delay (s)                | 14.2  |       | 28.7  |      |      | 17.6 |      |       | 30.1 |      |      |      |
| Approach LOS                      | B     |       | C     |      |      | B    |      |       | C    |      |      |      |

## Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 20.8  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.73  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 81.8% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
3435: N Street & 29th Street

6/1/2005



| Movement                          | EBT  | EBR   | EBR2 | WBL2  | WBL   | WBT   | SBL2 | SBL   | SBT  | SBR  |
|-----------------------------------|------|-------|------|-------|-------|-------|------|-------|------|------|
| Lane Configurations               | ↑    | ↘     |      |       | ↗     | ↖     |      | ↘↗    | ↑↖   |      |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900  | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)               | 4.0  | 4.0   |      |       | 4.0   | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor                 | 1.00 | 1.00  |      |       | 0.95  | 0.95  |      | 0.97  | 0.95 |      |
| Fr <sub>t</sub>                   | 1.00 | 0.85  |      |       | 1.00  | 1.00  |      | 1.00  | 1.00 |      |
| Fl <sub>t</sub> Protected         | 1.00 | 1.00  |      |       | 0.95  | 0.98  |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)                 | 1676 | 1425  |      |       | 1681  | 1737  |      | 3433  | 3353 |      |
| Fl <sub>t</sub> Permitted         | 1.00 | 1.00  |      |       | 0.95  | 0.98  |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)                 | 1676 | 1425  |      |       | 1681  | 1737  |      | 3433  | 3353 |      |
| Volume (vph)                      | 420  | 294   | 88   | 135   | 161   | 138   | 38   | 972   | 585  | 11   |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 420  | 294   | 88   | 135   | 161   | 138   | 38   | 972   | 585  | 11   |
| RTOR Reduction (vph)              | 0    | 15    | 0    | 0     | 0     | 0     | 0    | 0     | 2    | 0    |
| Lane Group Flow (vph)             | 420  | 367   | 0    | 0     | 211   | 223   | 0    | 1010  | 594  | 0    |
| Parking (#/hr)                    | 0    | 0     | 0    |       |       |       |      |       | 0    |      |
| Turn Type                         |      | Perm  |      | Split | Split |       | Perm | Perm  |      |      |
| Protected Phases                  | 4    |       |      | 8     | 8     | 8     |      |       | 6    |      |
| Permitted Phases                  |      | 4     |      |       |       |       | 6    | 6     |      |      |
| Actuated Green, G (s)             | 23.0 | 23.0  |      |       | 12.0  | 12.0  |      | 26.0  | 26.0 |      |
| Effective Green, g (s)            | 22.0 | 22.0  |      |       | 11.0  | 11.0  |      | 25.0  | 25.0 |      |
| Actuated g/C Ratio                | 0.31 | 0.31  |      |       | 0.16  | 0.16  |      | 0.36  | 0.36 |      |
| Clearance Time (s)                | 3.0  | 3.0   |      |       | 3.0   | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)                | 527  | 448   |      |       | 264   | 273   |      | 1226  | 1198 |      |
| v/s Ratio Prot                    | 0.25 |       |      |       | 0.13  | c0.13 |      |       | 0.18 |      |
| v/s Ratio Perm                    |      | c0.26 |      |       |       |       |      | c0.29 |      |      |
| v/c Ratio                         | 0.80 | 0.82  |      |       | 0.80  | 0.82  |      | 0.82  | 0.50 |      |
| Uniform Delay, d <sub>1</sub>     | 22.0 | 22.2  |      |       | 28.4  | 28.5  |      | 20.5  | 17.6 |      |
| Progression Factor                | 0.61 | 0.58  |      |       | 0.77  | 0.87  |      | 0.79  | 0.74 |      |
| Incremental Delay, d <sub>2</sub> | 9.8  | 12.7  |      |       | 20.1  | 20.2  |      | 4.5   | 1.0  |      |
| Delay (s)                         | 23.1 | 25.7  |      |       | 41.9  | 45.1  |      | 20.7  | 14.1 |      |
| Level of Service                  | C    | C     |      |       | D     | D     |      | C     | B    |      |
| Approach Delay (s)                | 24.3 |       |      |       |       | 43.6  |      |       | 18.2 |      |
| Approach LOS                      | C    |       |      |       |       | D     |      |       | B    |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 23.8  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.82  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 74.3% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3436: Capitol & Alhambra

6/1/2005



| Movement                  | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|---------------------------|-------|-------|------|-------|-------|------|------|-------|------|------|------|------|
| Lane Configurations       |       | ↕↔    |      |       | ↕↔    |      | ↗    | ↖     | ↗    | ↗    | ↖    | ↗    |
| Ideal Flow (vphpl)        | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |       | 4.0   |      |       | 4.0   |      | 4.0  | 4.0   | 4.0  | 4.0  | 4.0  | 4.0  |
| Lane Util. Factor         |       | 0.95  |      |       | 0.95  |      | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Fr <sub>t</sub>           |       | 0.99  |      |       | 0.97  |      | 1.00 | 1.00  | 0.85 | 1.00 | 1.00 | 0.85 |
| Fl <sub>t</sub> Protected |       | 0.99  |      |       | 1.00  |      | 0.95 | 1.00  | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot)         |       | 3297  |      |       | 3266  |      | 1593 | 1676  | 1425 | 1593 | 1676 | 1425 |
| Fl <sub>t</sub> Permitted |       | 0.99  |      |       | 1.00  |      | 0.29 | 1.00  | 1.00 | 0.23 | 1.00 | 1.00 |
| Satd. Flow (perm)         |       | 3297  |      |       | 3266  |      | 493  | 1676  | 1425 | 388  | 1676 | 1425 |
| Volume (vph)              | 64    | 382   | 42   | 49    | 567   | 125  | 53   | 494   | 85   | 112  | 439  | 83   |
| Peak-hour factor, PHF     | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 64    | 382   | 42   | 49    | 567   | 125  | 53   | 494   | 85   | 112  | 439  | 83   |
| RTOR Reduction (vph)      | 0     | 10    | 0    | 0     | 24    | 0    | 0    | 0     | 44   | 0    | 0    | 49   |
| Lane Group Flow (vph)     | 0     | 478   | 0    | 0     | 717   | 0    | 53   | 494   | 41   | 112  | 439  | 34   |
| Parking (#/hr)            | 0     | 0     | 0    | 0     | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type                 | Split |       |      | Split |       |      | Perm |       | Perm | Perm |      | Perm |
| Protected Phases          | 4     | 4     |      | 8     | 8     |      |      | 2     |      |      |      | 6    |
| Permitted Phases          |       |       |      |       |       |      | 2    |       | 2    | 6    |      | 6    |
| Actuated Green, G (s)     |       | 17.0  |      |       | 18.0  |      | 26.0 | 26.0  | 26.0 | 26.0 | 26.0 | 26.0 |
| Effective Green, g (s)    |       | 16.0  |      |       | 17.0  |      | 25.0 | 25.0  | 25.0 | 25.0 | 25.0 | 25.0 |
| Actuated g/C Ratio        |       | 0.23  |      |       | 0.24  |      | 0.36 | 0.36  | 0.36 | 0.36 | 0.36 | 0.36 |
| Clearance Time (s)        |       | 3.0   |      |       | 3.0   |      | 3.0  | 3.0   | 3.0  | 3.0  | 3.0  | 3.0  |
| Lane Grp Cap (vph)        |       | 754   |      |       | 793   |      | 176  | 599   | 509  | 139  | 599  | 509  |
| v/s Ratio Prot            |       | c0.14 |      |       | c0.22 |      |      | c0.29 |      |      | 0.26 |      |
| v/s Ratio Perm            |       |       |      |       |       |      | 0.11 |       | 0.03 | 0.29 |      | 0.02 |
| v/c Ratio                 |       | 0.63  |      |       | 0.90  |      | 0.30 | 0.82  | 0.08 | 0.81 | 0.73 | 0.07 |
| Uniform Delay, d1         |       | 24.4  |      |       | 25.7  |      | 16.2 | 20.5  | 14.9 | 20.3 | 19.6 | 14.8 |
| Progression Factor        |       | 0.77  |      |       | 1.00  |      | 0.88 | 0.79  | 0.95 | 0.91 | 0.92 | 1.34 |
| Incremental Delay, d2     |       | 3.9   |      |       | 15.7  |      | 2.8  | 8.3   | 0.2  | 31.1 | 6.2  | 0.2  |
| Delay (s)                 |       | 22.8  |      |       | 41.4  |      | 17.2 | 24.5  | 14.4 | 49.7 | 24.2 | 20.1 |
| Level of Service          |       | C     |      |       | D     |      | B    | C     | B    | D    | C    | C    |
| Approach Delay (s)        |       | 22.8  |      |       | 41.4  |      |      | 22.5  |      |      | 28.2 |      |
| Approach LOS              |       | C     |      |       | D     |      |      | C     |      |      | C    |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 29.6  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.80  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 80.4% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3437: P Street & 29th St off ramp

6/1/2005



| Movement               | WBL  | WBT   | SBT   | SBR  | SWL   | SWR  |
|------------------------|------|-------|-------|------|-------|------|
| Lane Configurations    | ↖    | ↑↑    | ↑↑↘   |      | ↘↘    | ↗    |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900  | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0  | 4.0   | 4.0   |      | 4.0   | 4.0  |
| Lane Util. Factor      | 1.00 | 0.95  | 0.91  |      | 0.97  | 0.91 |
| Frt                    | 1.00 | 1.00  | 0.98  |      | 0.99  | 0.85 |
| Flt Protected          | 0.95 | 1.00  | 1.00  |      | 0.96  | 1.00 |
| Satd. Flow (prot)      | 1593 | 3362  | 4801  |      | 3407  | 1441 |
| Flt Permitted          | 0.95 | 1.00  | 1.00  |      | 0.96  | 1.00 |
| Satd. Flow (perm)      | 1593 | 3362  | 4801  |      | 3407  | 1441 |
| Volume (vph)           | 156  | 672   | 656   | 121  | 325   | 186  |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 156  | 672   | 656   | 121  | 325   | 186  |
| RTOR Reduction (vph)   | 81   | 0     | 38    | 0    | 0     | 0    |
| Lane Group Flow (vph)  | 75   | 672   | 739   | 0    | 360   | 151  |
| Parking (#/hr)         | 0    | 0     | 0     | 0    |       |      |
| Turn Type              | Perm |       |       |      |       | Perm |
| Protected Phases       |      | 6     | 7     |      | 8     |      |
| Permitted Phases       | 6    |       |       |      |       | 8    |
| Actuated Green, G (s)  | 24.0 | 24.0  | 18.0  |      | 19.0  | 19.0 |
| Effective Green, g (s) | 23.0 | 23.0  | 17.0  |      | 18.0  | 18.0 |
| Actuated g/C Ratio     | 0.33 | 0.33  | 0.24  |      | 0.26  | 0.26 |
| Clearance Time (s)     | 3.0  | 3.0   | 3.0   |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)     | 523  | 1105  | 1166  |      | 876   | 371  |
| v/s Ratio Prot         |      | c0.20 | c0.15 |      | c0.11 |      |
| v/s Ratio Perm         | 0.05 |       |       |      |       | 0.10 |
| v/c Ratio              | 0.14 | 0.61  | 0.63  |      | 0.41  | 0.41 |
| Uniform Delay, d1      | 16.6 | 19.7  | 23.7  |      | 21.6  | 21.6 |
| Progression Factor     | 0.09 | 0.37  | 0.67  |      | 1.00  | 1.00 |
| Incremental Delay, d2  | 0.5  | 2.0   | 2.1   |      | 1.4   | 3.3  |
| Delay (s)              | 2.0  | 9.4   | 18.0  |      | 23.0  | 24.9 |
| Level of Service       | A    | A     | B     |      | C     | C    |
| Approach Delay (s)     |      | 8.0   | 18.0  |      | 23.6  |      |
| Approach LOS           |      | A     | B     |      | C     |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 15.4  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.55  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 55.2% | ICU Level of Service | B    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |



HCM Signalized Intersection Capacity Analysis  
 3438: P Street & Alhambra

6/1/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT  | WBR  | NBL                  | NBT   | NBR  | SBL   | SBT  | SBR  |
|-----------------------------------|------|------|-------|------|------|------|----------------------|-------|------|-------|------|------|
| Lane Configurations               |      |      |       |      | ↕↕↕  |      | ↖                    | ↗     |      | ↖     | ↗    |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900                 | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)               |      |      |       |      | 4.0  |      | 4.0                  | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor                 |      |      |       |      | 0.91 |      | 1.00                 | 1.00  |      | 1.00  | 1.00 |      |
| Frt                               |      |      |       |      | 0.97 |      | 1.00                 | 0.94  |      | 1.00  | 0.97 |      |
| Flt Protected                     |      |      |       |      | 1.00 |      | 0.95                 | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)                 |      |      |       |      | 4934 |      | 1770                 | 1758  |      | 1770  | 1813 |      |
| Flt Permitted                     |      |      |       |      | 1.00 |      | 0.95                 | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)                 |      |      |       |      | 4934 |      | 1770                 | 1758  |      | 1770  | 1813 |      |
| Volume (vph)                      | 0    | 0    | 0     | 75   | 795  | 185  | 158                  | 391   | 234  | 254   | 410  | 89   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00                 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 75   | 795  | 185  | 158                  | 391   | 234  | 254   | 410  | 89   |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 0    | 47   | 0    | 0                    | 31    | 0    | 0     | 11   | 0    |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 0    | 1008 | 0    | 158                  | 594   | 0    | 254   | 488  | 0    |
| Turn Type                         |      |      |       |      | Perm |      | Prot                 |       |      | Prot  |      |      |
| Protected Phases                  |      |      |       |      |      | 6    | 3                    | 8     |      | 7     | 4    |      |
| Permitted Phases                  |      |      |       |      | 6    |      |                      |       |      |       |      |      |
| Actuated Green, G (s)             |      |      |       |      |      | 17.0 | 10.0                 | 31.0  |      | 13.0  | 34.0 |      |
| Effective Green, g (s)            |      |      |       |      |      | 16.0 | 9.0                  | 30.0  |      | 12.0  | 33.0 |      |
| Actuated g/C Ratio                |      |      |       |      |      | 0.23 | 0.13                 | 0.43  |      | 0.17  | 0.47 |      |
| Clearance Time (s)                |      |      |       |      |      | 3.0  | 3.0                  | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)                |      |      |       |      |      | 1128 | 228                  | 753   |      | 303   | 855  |      |
| v/s Ratio Prot                    |      |      |       |      |      |      | 0.09                 | c0.34 |      | c0.14 | 0.27 |      |
| v/s Ratio Perm                    |      |      |       |      |      | 0.20 |                      |       |      |       |      |      |
| v/c Ratio                         |      |      |       |      |      | 0.89 | 0.69                 | 0.79  |      | 0.84  | 0.57 |      |
| Uniform Delay, d1                 |      |      |       |      |      | 26.2 | 29.2                 | 17.3  |      | 28.1  | 13.4 |      |
| Progression Factor                |      |      |       |      |      | 1.00 | 1.00                 | 1.00  |      | 1.14  | 0.46 |      |
| Incremental Delay, d2             |      |      |       |      |      | 10.9 | 16.0                 | 8.2   |      | 16.0  | 1.8  |      |
| Delay (s)                         |      |      |       |      |      | 37.1 | 45.2                 | 25.5  |      | 47.9  | 7.9  |      |
| Level of Service                  |      |      |       |      |      | D    | D                    | C     |      | D     | A    |      |
| Approach Delay (s)                |      | 0.0  |       |      |      | 37.1 |                      | 29.5  |      |       | 21.4 |      |
| Approach LOS                      |      | A    |       |      |      | D    |                      | C     |      |       | C    |      |
| <b>Intersection Summary</b>       |      |      |       |      |      |      |                      |       |      |       |      |      |
| HCM Average Control Delay         |      |      | 30.2  |      |      |      | HCM Level of Service |       |      |       | C    |      |
| HCM Volume to Capacity ratio      |      |      | 0.83  |      |      |      |                      |       |      |       |      |      |
| Actuated Cycle Length (s)         |      |      | 70.0  |      |      |      | Sum of lost time (s) |       |      |       | 12.0 |      |
| Intersection Capacity Utilization |      |      | 79.9% |      |      |      | ICU Level of Service |       |      |       | D    |      |
| Analysis Period (min)             |      |      | 15    |      |      |      |                      |       |      |       |      |      |

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

3444: Q Street & 29th Street

6/1/2005



| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations       |      | ↑↑   |      |      |      |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |      | 4.0  |      |      |      |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor         |      | 0.95 |      |      |      |      |      |      |      |      | 0.91 |      |
| Fr <sub>t</sub>           |      | 0.97 |      |      |      |      |      |      |      |      | 1.00 |      |
| Fl <sub>t</sub> Protected |      | 1.00 |      |      |      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (prot)         |      | 3427 |      |      |      |      |      |      |      |      | 5050 |      |
| Fl <sub>t</sub> Permitted |      | 1.00 |      |      |      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (perm)         |      | 3427 |      |      |      |      |      |      |      |      | 5050 |      |
| Volume (vph)              | 0    | 606  | 162  | 0    | 0    | 0    | 0    | 0    | 0    | 164  | 999  | 0    |
| Peak-hour factor, PHF     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 0    | 606  | 162  | 0    | 0    | 0    | 0    | 0    | 0    | 164  | 999  | 0    |
| RTOR Reduction (vph)      | 0    | 26   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 32   | 0    |
| Lane Group Flow (vph)     | 0    | 742  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1131 | 0    |

| Turn Type                         | Perm  |  |  |  |     |  |  |  |     |  |  |      |     |
|-----------------------------------|-------|--|--|--|-----|--|--|--|-----|--|--|------|-----|
| Protected Phases                  | 2     |  |  |  |     |  |  |  |     |  |  | 4    |     |
| Permitted Phases                  |       |  |  |  |     |  |  |  |     |  |  | 4    |     |
| Actuated Green, G (s)             | 33.0  |  |  |  |     |  |  |  |     |  |  | 31.0 |     |
| Effective Green, g (s)            | 32.0  |  |  |  |     |  |  |  |     |  |  | 30.0 |     |
| Actuated g/C Ratio                | 0.46  |  |  |  |     |  |  |  |     |  |  | 0.43 |     |
| Clearance Time (s)                | 3.0   |  |  |  |     |  |  |  |     |  |  | 3.0  |     |
| Lane Grp Cap (vph)                | 1567  |  |  |  |     |  |  |  |     |  |  | 2164 |     |
| v/s Ratio Prot                    | c0.22 |  |  |  |     |  |  |  |     |  |  |      |     |
| v/s Ratio Perm                    |       |  |  |  |     |  |  |  |     |  |  | 0.22 |     |
| v/c Ratio                         | 0.47  |  |  |  |     |  |  |  |     |  |  | 0.52 |     |
| Uniform Delay, d <sub>1</sub>     | 13.2  |  |  |  |     |  |  |  |     |  |  | 14.7 |     |
| Progression Factor                | 1.00  |  |  |  |     |  |  |  |     |  |  | 0.30 |     |
| Incremental Delay, d <sub>2</sub> | 1.0   |  |  |  |     |  |  |  |     |  |  | 0.8  |     |
| Delay (s)                         | 14.2  |  |  |  |     |  |  |  |     |  |  | 5.3  |     |
| Level of Service                  | B     |  |  |  |     |  |  |  |     |  |  | A    |     |
| Approach Delay (s)                | 14.2  |  |  |  | 0.0 |  |  |  | 0.0 |  |  |      | 5.3 |
| Approach LOS                      | B     |  |  |  | A   |  |  |  | A   |  |  |      | A   |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 8.8   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.50  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 51.2% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 3467: N Street & Alhambra

6/1/2005

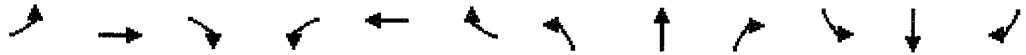


| Movement                          | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|-------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations               |      | ↕     |      |      | ↕    |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0   |      |      | 4.0  |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor                 |      | 1.00  |      |      | 1.00 |      |      | 1.00  |      |      | 1.00 |      |
| Fr <sub>t</sub>                   |      | 0.96  |      |      | 0.99 |      |      | 0.99  |      |      | 0.99 |      |
| Fl <sub>t</sub> Protected         |      | 0.99  |      |      | 0.99 |      |      | 1.00  |      |      | 1.00 |      |
| Satd. Flow (prot)                 |      | 1596  |      |      | 1644 |      |      | 1651  |      |      | 1665 |      |
| Fl <sub>t</sub> Permitted         |      | 0.90  |      |      | 0.88 |      |      | 0.97  |      |      | 0.99 |      |
| Satd. Flow (perm)                 |      | 1441  |      |      | 1457 |      |      | 1612  |      |      | 1653 |      |
| Volume (vph)                      | 86   | 263   | 147  | 57   | 242  | 26   | 21   | 500   | 57   | 9    | 551  | 27   |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 86   | 263   | 147  | 57   | 242  | 26   | 21   | 500   | 57   | 9    | 551  | 27   |
| RTOR Reduction (vph)              | 0    | 22    | 0    | 0    | 5    | 0    | 0    | 5     | 0    | 0    | 3    | 0    |
| Lane Group Flow (vph)             | 0    | 474   | 0    | 0    | 320  | 0    | 0    | 573   | 0    | 0    | 584  | 0    |
| Parking (#/hr)                    | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type                         | Perm |       | Perm |      |      | Perm |      |       | Perm |      |      |      |
| Protected Phases                  |      | 4     |      |      | 8    |      |      | 2     |      |      | 6    |      |
| Permitted Phases                  | 4    |       |      | 8    |      |      | 2    |       |      | 6    |      |      |
| Actuated Green, G (s)             |      | 31.0  |      |      | 31.0 |      |      | 33.0  |      |      | 33.0 |      |
| Effective Green, g (s)            |      | 30.0  |      |      | 30.0 |      |      | 32.0  |      |      | 32.0 |      |
| Actuated g/C Ratio                |      | 0.43  |      |      | 0.43 |      |      | 0.46  |      |      | 0.46 |      |
| Clearance Time (s)                |      | 3.0   |      |      | 3.0  |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |      | 618   |      |      | 624  |      |      | 737   |      |      | 756  |      |
| v/s Ratio Prot                    |      |       |      |      |      |      |      |       |      |      |      |      |
| v/s Ratio Perm                    |      | c0.33 |      |      | 0.22 |      |      | c0.36 |      |      | 0.35 |      |
| v/c Ratio                         |      | 0.77  |      |      | 0.51 |      |      | 0.78  |      |      | 0.77 |      |
| Uniform Delay, d <sub>1</sub>     |      | 17.0  |      |      | 14.7 |      |      | 16.0  |      |      | 15.9 |      |
| Progression Factor                |      | 0.62  |      |      | 1.00 |      |      | 0.61  |      |      | 0.57 |      |
| Incremental Delay, d <sub>2</sub> |      | 7.3   |      |      | 3.0  |      |      | 4.4   |      |      | 5.6  |      |
| Delay (s)                         |      | 17.8  |      |      | 17.7 |      |      | 14.1  |      |      | 14.8 |      |
| Level of Service                  |      | B     |      |      | B    |      |      | B     |      |      | B    |      |
| Approach Delay (s)                |      | 17.8  |      |      | 17.7 |      |      | 14.1  |      |      | 14.8 |      |
| Approach LOS                      |      | B     |      |      | B    |      |      | B     |      |      | B    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 15.8  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.77  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 85.2% | ICU Level of Service | E   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
5802: K Street & 29th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑    | ↗    | ↖    | ↑     |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  | 4.0  | 4.0   |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00 | 1.00 | 1.00 | 1.00  |      |      |      |      |      | 0.91 |      |
| Frt                    |      | 1.00 | 0.85 | 1.00 | 1.00  |      |      |      |      |      | 0.97 |      |
| Flt Protected          |      | 1.00 | 1.00 | 0.95 | 1.00  |      |      |      |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 1863 | 1583 | 1770 | 1863  |      |      |      |      |      | 4939 |      |
| Flt Permitted          |      | 1.00 | 1.00 | 0.52 | 1.00  |      |      |      |      |      | 1.00 |      |
| Satd. Flow (perm)      |      | 1863 | 1583 | 974  | 1863  |      |      |      |      |      | 4939 |      |
| Volume (vph)           | 0    | 300  | 199  | 207  | 438   | 0    | 0    | 0    | 0    | 88   | 930  | 207  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 300  | 199  | 207  | 438   | 0    | 0    | 0    | 0    | 88   | 930  | 207  |
| RTOR Reduction (vph)   | 0    | 0    | 25   | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 44   | 0    |
| Lane Group Flow (vph)  | 0    | 300  | 174  | 207  | 438   | 0    | 0    | 0    | 0    | 0    | 1181 | 0    |
| Turn Type              |      |      | Perm | Perm |       |      |      |      |      | Perm |      |      |
| Protected Phases       |      | 4    |      |      | 8     |      |      |      |      |      |      | 6    |
| Permitted Phases       |      |      | 4    | 8    |       |      |      |      |      | 6    |      |      |
| Actuated Green, G (s)  |      | 35.0 | 35.0 | 35.0 | 35.0  |      |      |      |      |      |      | 29.0 |
| Effective Green, g (s) |      | 34.0 | 34.0 | 34.0 | 34.0  |      |      |      |      |      |      | 28.0 |
| Actuated g/C Ratio     |      | 0.49 | 0.49 | 0.49 | 0.49  |      |      |      |      |      |      | 0.40 |
| Clearance Time (s)     |      | 3.0  | 3.0  | 3.0  | 3.0   |      |      |      |      |      |      | 3.0  |
| Lane Grp Cap (vph)     |      | 905  | 769  | 473  | 905   |      |      |      |      |      |      | 1976 |
| v/s Ratio Prot         |      | 0.16 |      |      | c0.24 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      | 0.11 | 0.21 |       |      |      |      |      |      |      | 0.24 |
| v/c Ratio              |      | 0.33 | 0.23 | 0.44 | 0.48  |      |      |      |      |      |      | 0.60 |
| Uniform Delay, d1      |      | 11.0 | 10.4 | 11.8 | 12.1  |      |      |      |      |      |      | 16.6 |
| Progression Factor     |      | 0.90 | 0.82 | 0.79 | 0.79  |      |      |      |      |      |      | 0.61 |
| Incremental Delay, d2  |      | 0.9  | 0.7  | 2.6  | 1.6   |      |      |      |      |      |      | 1.1  |
| Delay (s)              |      | 10.8 | 9.2  | 11.8 | 11.2  |      |      |      |      |      |      | 11.3 |
| Level of Service       |      | B    | A    | B    | B     |      |      |      |      |      |      | B    |
| Approach Delay (s)     |      | 10.2 |      |      | 11.4  |      |      | 0.0  |      |      |      | 11.3 |
| Approach LOS           |      | B    |      |      | B     |      |      | A    |      |      |      | B    |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.1  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.54  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 63.6% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
5848: J Street & 30th Street

6/1/2005



| Movement               | EBL2 | EBL  | EBT  | WBR2 | NBL  | NBT  | NBR  |
|------------------------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↵    | ↕↕↕  | ↵    | ↵    | ↕↕   |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  |      | 4.0  | 4.0  |      |
| Lane Util. Factor      |      | 0.86 | 0.86 |      | 0.91 | 0.91 |      |
| Frt                    |      | 1.00 | 1.00 |      | 1.00 | 0.96 |      |
| Flt Protected          |      | 0.95 | 1.00 |      | 0.95 | 0.99 |      |
| Satd. Flow (prot)      |      | 1522 | 4643 |      | 1610 | 3237 |      |
| Flt Permitted          |      | 0.95 | 1.00 |      | 0.95 | 0.99 |      |
| Satd. Flow (perm)      |      | 1522 | 4643 |      | 1610 | 3237 |      |
| Volume (vph)           | 192  | 202  | 1080 | 0    | 377  | 370  | 157  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 192  | 202  | 1080 | 0    | 377  | 370  | 157  |
| RTOR Reduction (vph)   | 0    | 52   | 0    | 0    | 0    | 29   | 0    |
| Lane Group Flow (vph)  | 0    | 331  | 1091 | 0    | 296  | 579  | 0    |
| Parking (#/hr)         |      |      | 0    | 0    |      |      | 0    |
| Turn Type              | Perm | Perm |      | Free | Perm |      |      |
| Protected Phases       |      |      | 2    |      |      | 8    |      |
| Permitted Phases       | 2    | 2    |      | Free | 8    |      |      |
| Actuated Green, G (s)  |      | 34.0 | 34.0 |      | 30.0 | 30.0 |      |
| Effective Green, g (s) |      | 33.0 | 33.0 |      | 29.0 | 29.0 |      |
| Actuated g/C Ratio     |      | 0.47 | 0.47 |      | 0.41 | 0.41 |      |
| Clearance Time (s)     |      | 3.0  | 3.0  |      | 3.0  | 3.0  |      |
| Lane Grp Cap (vph)     |      | 718  | 2189 |      | 667  | 1341 |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      | 0.22 | 0.23 |      | 0.18 | 0.18 |      |
| v/c Ratio              |      | 0.46 | 0.50 |      | 0.44 | 0.43 |      |
| Uniform Delay, d1      |      | 12.5 | 12.8 |      | 14.7 | 14.6 |      |
| Progression Factor     |      | 0.11 | 0.27 |      | 0.32 | 0.26 |      |
| Incremental Delay, d2  |      | 1.4  | 0.5  |      | 1.8  | 0.9  |      |
| Delay (s)              |      | 2.8  | 4.0  |      | 6.6  | 4.7  |      |
| Level of Service       |      | A    | A    |      | A    | A    |      |
| Approach Delay (s)     |      |      | 3.7  |      |      | 5.3  |      |
| Approach LOS           |      |      | A    |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 4.3   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.47  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 45.8% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 5849: L Street & 30th Street

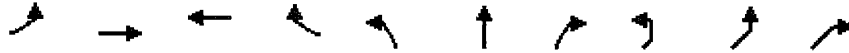
6/1/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT   | WBR  | NBL                  | NBT   | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|-------|------|-------|------|----------------------|-------|------|------|------|------|
| Lane Configurations               |      |      |       |      | ↑↑↑   |      | ↔                    | ↑↑↑   |      |      |      |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 | 1900                 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      |      |       |      | 4.0   |      | 4.0                  | 4.0   |      |      |      |      |
| Lane Util. Factor                 |      |      |       |      | 0.91  |      | 0.86                 | 0.86  |      |      |      |      |
| Frt                               |      |      |       |      | 0.98  |      | 1.00                 | 1.00  |      |      |      |      |
| Flt Protected                     |      |      |       |      | 1.00  |      | 0.95                 | 1.00  |      |      |      |      |
| Satd. Flow (prot)                 |      |      |       |      | 4959  |      | 1522                 | 4646  |      |      |      |      |
| Flt Permitted                     |      |      |       |      | 1.00  |      | 0.95                 | 1.00  |      |      |      |      |
| Satd. Flow (perm)                 |      |      |       |      | 4959  |      | 1522                 | 4646  |      |      |      |      |
| Volume (vph)                      | 0    | 0    | 0     | 0    | 444   | 88   | 175                  | 1310  | 0    | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00                 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 0    | 444   | 88   | 175                  | 1310  | 0    | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 0    | 20    | 0    | 88                   | 0     | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 0    | 512   | 0    | 88                   | 1310  | 0    | 0    | 0    | 0    |
| Parking (#/hr)                    |      |      |       |      |       | 0    |                      | 0     |      |      |      |      |
| Turn Type                         |      |      |       |      |       |      | Perm                 |       |      |      |      |      |
| Protected Phases                  |      |      |       |      | 6     |      |                      | 8     |      |      |      |      |
| Permitted Phases                  |      |      |       |      |       |      | 8                    |       |      |      |      |      |
| Actuated Green, G (s)             |      |      |       |      | 28.0  |      | 36.0                 | 36.0  |      |      |      |      |
| Effective Green, g (s)            |      |      |       |      | 27.0  |      | 35.0                 | 35.0  |      |      |      |      |
| Actuated g/C Ratio                |      |      |       |      | 0.39  |      | 0.50                 | 0.50  |      |      |      |      |
| Clearance Time (s)                |      |      |       |      | 3.0   |      | 3.0                  | 3.0   |      |      |      |      |
| Lane Grp Cap (vph)                |      |      |       |      | 1913  |      | 761                  | 2323  |      |      |      |      |
| v/s Ratio Prot                    |      |      |       |      | c0.10 |      |                      | c0.28 |      |      |      |      |
| v/s Ratio Perm                    |      |      |       |      |       |      | 0.06                 |       |      |      |      |      |
| v/c Ratio                         |      |      |       |      | 0.27  |      | 0.11                 | 0.56  |      |      |      |      |
| Uniform Delay, d1                 |      |      |       |      | 14.7  |      | 9.3                  | 12.2  |      |      |      |      |
| Progression Factor                |      |      |       |      | 1.33  |      | 0.15                 | 0.56  |      |      |      |      |
| Incremental Delay, d2             |      |      |       |      | 0.3   |      | 0.3                  | 1.0   |      |      |      |      |
| Delay (s)                         |      |      |       |      | 19.9  |      | 1.7                  | 7.8   |      |      |      |      |
| Level of Service                  |      |      |       |      | B     |      | A                    | A     |      |      |      |      |
| Approach Delay (s)                |      | 0.0  |       |      | 19.9  |      |                      | 7.1   |      |      | 0.0  |      |
| Approach LOS                      |      | A    |       |      | B     |      |                      | A     |      |      | A    |      |
| <b>Intersection Summary</b>       |      |      |       |      |       |      |                      |       |      |      |      |      |
| HCM Average Control Delay         |      |      | 10.5  |      |       |      | HCM Level of Service |       |      |      | B    |      |
| HCM Volume to Capacity ratio      |      |      | 0.43  |      |       |      |                      |       |      |      |      |      |
| Actuated Cycle Length (s)         |      |      | 70.0  |      |       |      | Sum of lost time (s) |       |      |      | 8.0  |      |
| Intersection Capacity Utilization |      |      | 45.3% |      |       |      | ICU Level of Service |       |      |      | A    |      |
| Analysis Period (min)             |      |      | 15    |      |       |      |                      |       |      |      |      |      |
| c Critical Lane Group             |      |      |       |      |       |      |                      |       |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
5880: N Street & 30th Street

6/1/2005



| Movement                          | EBL  | EBT   | WBT  | WBR  | NBL  | NBT  | NBR   | NEL2 | NEL   | NER  |
|-----------------------------------|------|-------|------|------|------|------|-------|------|-------|------|
| Lane Configurations               | ↵    | ↑     | ↗    |      |      | ↑↑↑  |       |      | ↘↘    |      |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 |
| Total Lost time (s)               | 4.0  | 4.0   | 4.0  |      |      | 4.0  |       |      | 4.0   |      |
| Lane Util. Factor                 | 1.00 | 1.00  | 1.00 |      |      | 0.91 |       |      | 0.97  |      |
| Fr <sub>t</sub>                   | 1.00 | 1.00  | 0.97 |      |      | 0.98 |       |      | 0.98  |      |
| Fl <sub>t</sub> Protected         | 0.95 | 1.00  | 1.00 |      |      | 0.99 |       |      | 0.96  |      |
| Satd. Flow (prot)                 | 1770 | 1863  | 1808 |      |      | 4960 |       |      | 3385  |      |
| Fl <sub>t</sub> Permitted         | 0.49 | 1.00  | 1.00 |      |      | 0.99 |       |      | 0.96  |      |
| Satd. Flow (perm)                 | 913  | 1863  | 1808 |      |      | 4960 |       |      | 3385  |      |
| Volume (vph)                      | 92   | 373   | 212  | 59   | 60   | 323  | 52    | 156  | 408   | 106  |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)                   | 92   | 373   | 212  | 59   | 60   | 323  | 52    | 156  | 408   | 106  |
| RTOR Reduction (vph)              | 0    | 0     | 14   | 0    | 0    | 25   | 0     | 0    | 0     | 0    |
| Lane Group Flow (vph)             | 92   | 373   | 257  | 0    | 0    | 410  | 0     | 0    | 670   | 0    |
| Turn Type                         | Perm |       |      | Perm |      |      | Split |      |       |      |
| Protected Phases                  |      | 4     | 8    |      |      | 2    |       | 6    | 6     |      |
| Permitted Phases                  | 4    |       |      |      | 2    |      |       |      |       |      |
| Actuated Green, G (s)             | 25.0 | 25.0  | 25.0 |      |      | 13.0 |       |      | 23.0  |      |
| Effective Green, g (s)            | 24.0 | 24.0  | 24.0 |      |      | 12.0 |       |      | 22.0  |      |
| Actuated g/C Ratio                | 0.34 | 0.34  | 0.34 |      |      | 0.17 |       |      | 0.31  |      |
| Clearance Time (s)                | 3.0  | 3.0   | 3.0  |      |      | 3.0  |       |      | 3.0   |      |
| Lane Grp Cap (vph)                | 313  | 639   | 620  |      |      | 850  |       |      | 1064  |      |
| v/s Ratio Prot                    |      | c0.20 | 0.14 |      |      |      |       |      | c0.20 |      |
| v/s Ratio Perm                    | 0.10 |       |      |      |      | 0.08 |       |      |       |      |
| v/c Ratio                         | 0.29 | 0.58  | 0.41 |      |      | 0.48 |       |      | 0.63  |      |
| Uniform Delay, d <sub>1</sub>     | 16.8 | 18.9  | 17.6 |      |      | 26.2 |       |      | 20.5  |      |
| Progression Factor                | 0.09 | 0.09  | 0.40 |      |      | 0.93 |       |      | 1.00  |      |
| Incremental Delay, d <sub>2</sub> | 1.4  | 2.3   | 1.7  |      |      | 1.9  |       |      | 2.8   |      |
| Delay (s)                         | 3.0  | 4.0   | 8.7  |      |      | 26.4 |       |      | 23.3  |      |
| Level of Service                  | A    | A     | A    |      |      | C    |       |      | C     |      |
| Approach Delay (s)                |      | 3.8   | 8.7  |      |      | 26.4 |       |      | 23.3  |      |
| Approach LOS                      |      | A     | A    |      |      | C    |       |      | C     |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 17.0  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.58  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 61.2% | ICU Level of Service | B    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
5882: P Street & 30th Street

6/1/2005



| Movement               | WBT   | WBR  | WBR2 | NBL2 | NBL   | NBT  |
|------------------------|-------|------|------|------|-------|------|
| Lane Configurations    | ↑↑↑   |      |      |      | ↑     | ↑↑↑  |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0   |      |      |      | 4.0   | 4.0  |
| Lane Util. Factor      | 0.91  |      |      |      | 1.00  | 0.91 |
| Frt                    | 0.94  |      |      |      | 1.00  | 1.00 |
| Flt Protected          | 1.00  |      |      |      | 0.95  | 1.00 |
| Satd. Flow (prot)      | 4792  |      |      |      | 1593  | 4916 |
| Flt Permitted          | 1.00  |      |      |      | 0.95  | 1.00 |
| Satd. Flow (perm)      | 4792  |      |      |      | 1593  | 4916 |
| Volume (vph)           | 682   | 295  | 132  | 110  | 442   | 340  |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 682   | 295  | 132  | 110  | 442   | 340  |
| RTOR Reduction (vph)   | 25    | 0    | 0    | 0    | 13    | 0    |
| Lane Group Flow (vph)  | 1084  | 0    | 0    | 0    | 539   | 340  |
| Parking (#/hr)         |       | 0    | 0    | 0    | 0     | 0    |
| Turn Type              |       |      |      | Perm | Perm  |      |
| Protected Phases       | 6     |      |      |      |       | 8    |
| Permitted Phases       |       |      |      | 8    | 8     |      |
| Actuated Green, G (s)  | 26.0  |      |      |      | 38.0  | 38.0 |
| Effective Green, g (s) | 25.0  |      |      |      | 37.0  | 37.0 |
| Actuated g/C Ratio     | 0.36  |      |      |      | 0.53  | 0.53 |
| Clearance Time (s)     | 3.0   |      |      |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)     | 1711  |      |      |      | 842   | 2598 |
| v/s Ratio Prot         | c0.23 |      |      |      |       | 0.07 |
| v/s Ratio Perm         |       |      |      |      | c0.34 |      |
| v/c Ratio              | 0.63  |      |      |      | 0.64  | 0.13 |
| Uniform Delay, d1      | 18.7  |      |      |      | 11.8  | 8.4  |
| Progression Factor     | 0.25  |      |      |      | 1.00  | 1.00 |
| Incremental Delay, d2  | 1.1   |      |      |      | 3.7   | 0.1  |
| Delay (s)              | 5.8   |      |      |      | 15.5  | 8.5  |
| Level of Service       | A     |      |      |      | B     | A    |
| Approach Delay (s)     | 5.8   |      |      |      |       | 12.8 |
| Approach LOS           | A     |      |      |      |       | B    |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 8.9   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.64  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 60.0% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
5886: Capitol & 30th Street

6/1/2005



| Movement                          | EBL   | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|-------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations               | ↖     | ↗    |      |      | ↖     |      |      | ↗    |      |      |      |      |
| Ideal Flow (vphpl)                | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               | 4.0   | 4.0  |      |      | 4.0   |      |      | 4.0  |      |      |      |      |
| Lane Util. Factor                 | 1.00  | 0.95 |      |      | 0.95  |      |      | 0.91 |      |      |      |      |
| Fr <sub>t</sub>                   | 1.00  | 1.00 |      |      | 0.98  |      |      | 0.98 |      |      |      |      |
| Flt Protected                     | 0.95  | 1.00 |      |      | 1.00  |      |      | 1.00 |      |      |      |      |
| Satd. Flow (prot)                 | 1770  | 3539 |      |      | 3469  |      |      | 4975 |      |      |      |      |
| Flt Permitted                     | 0.95  | 1.00 |      |      | 1.00  |      |      | 1.00 |      |      |      |      |
| Satd. Flow (perm)                 | 1770  | 3539 |      |      | 3469  |      |      | 4975 |      |      |      |      |
| Volume (vph)                      | 113   | 405  | 0    | 0    | 472   | 72   | 69   | 698  | 103  | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 113   | 405  | 0    | 0    | 472   | 72   | 69   | 698  | 103  | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0     | 0    | 0    | 0    | 17    | 0    | 0    | 25   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 113   | 405  | 0    | 0    | 527   | 0    | 0    | 846  | 0    | 0    | 0    | 0    |
| Turn Type                         | Prot  |      |      | Perm |       |      |      |      |      |      |      |      |
| Protected Phases                  | 7     | 4    |      |      | 8     |      |      | 2    |      |      |      |      |
| Permitted Phases                  |       |      |      |      |       |      | 2    |      |      |      |      |      |
| Actuated Green, G (s)             | 16.0  | 42.0 |      |      | 23.0  |      |      | 22.0 |      |      |      |      |
| Effective Green, g (s)            | 15.0  | 41.0 |      |      | 22.0  |      |      | 21.0 |      |      |      |      |
| Actuated g/C Ratio                | 0.21  | 0.59 |      |      | 0.31  |      |      | 0.30 |      |      |      |      |
| Clearance Time (s)                | 3.0   | 3.0  |      |      | 3.0   |      |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)                | 379   | 2073 |      |      | 1090  |      |      | 1493 |      |      |      |      |
| v/s Ratio Prot                    | c0.06 | 0.11 |      |      | c0.15 |      |      |      |      |      |      |      |
| v/s Ratio Perm                    |       |      |      |      |       |      |      | 0.17 |      |      |      |      |
| v/c Ratio                         | 0.30  | 0.20 |      |      | 0.48  |      |      | 0.57 |      |      |      |      |
| Uniform Delay, d <sub>1</sub>     | 23.1  | 6.8  |      |      | 19.4  |      |      | 20.7 |      |      |      |      |
| Progression Factor                | 0.66  | 0.55 |      |      | 0.48  |      |      | 1.12 |      |      |      |      |
| Incremental Delay, d <sub>2</sub> | 1.8   | 0.2  |      |      | 0.9   |      |      | 1.3  |      |      |      |      |
| Delay (s)                         | 17.1  | 3.9  |      |      | 10.4  |      |      | 24.6 |      |      |      |      |
| Level of Service                  | B     | A    |      |      | B     |      |      | C    |      |      |      |      |
| Approach Delay (s)                |       | 6.8  |      |      | 10.4  |      |      | 24.6 |      |      | 0.0  |      |
| Approach LOS                      |       | A    |      |      | B     |      |      | C    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 15.8  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.47  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 69.5% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 5888: Capitol & 29th Street

6/1/2005



| Movement                          | EBL  | EBT  | EBR   | WBL   | WBT  | WBR                  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|-------|-------|------|----------------------|------|------|------|------|------|------|
| Lane Configurations               |      | ↑↑   |       | ↖     | ↑↑   |                      |      |      |      |      | ↑↑   |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900  | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0  |       | 4.0   | 4.0  |                      |      |      |      |      | 4.0  |      |
| Lane Util. Factor                 |      | 0.95 |       | 1.00  | 0.95 |                      |      |      |      |      | 0.91 |      |
| Frt                               |      | 0.94 |       | 1.00  | 1.00 |                      |      |      |      |      | 0.98 |      |
| Flt Protected                     |      | 1.00 |       | 0.95  | 1.00 |                      |      |      |      |      | 1.00 |      |
| Satd. Flow (prot)                 |      | 3168 |       | 1770  | 3539 |                      |      |      |      |      | 4818 |      |
| Flt Permitted                     |      | 1.00 |       | 0.36  | 1.00 |                      |      |      |      |      | 1.00 |      |
| Satd. Flow (perm)                 |      | 3168 |       | 664   | 3539 |                      |      |      |      |      | 4818 |      |
| Volume (vph)                      | 0    | 394  | 247   | 198   | 413  | 0                    | 0    | 0    | 0    | 123  | 1226 | 160  |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 394  | 247   | 198   | 413  | 0                    | 0    | 0    | 0    | 123  | 1226 | 160  |
| RTOR Reduction (vph)              | 0    | 9    | 0     | 0     | 0    | 0                    | 0    | 0    | 0    | 0    | 21   | 0    |
| Lane Group Flow (vph)             | 0    | 632  | 0     | 198   | 413  | 0                    | 0    | 0    | 0    | 0    | 1488 | 0    |
| Parking (#/hr)                    |      | 0    | 0     |       |      |                      |      |      |      |      | 0    | 0    |
| Turn Type                         |      |      |       | Perm  |      |                      |      |      |      |      | Perm |      |
| Protected Phases                  |      | 4    |       |       | 8    |                      |      |      |      |      |      | 6    |
| Permitted Phases                  |      |      |       | 8     |      |                      |      |      |      | 6    |      |      |
| Actuated Green, G (s)             |      | 35.0 |       | 35.0  | 35.0 |                      |      |      |      |      | 29.0 |      |
| Effective Green, g (s)            |      | 34.0 |       | 34.0  | 34.0 |                      |      |      |      |      | 28.0 |      |
| Actuated g/C Ratio                |      | 0.49 |       | 0.49  | 0.49 |                      |      |      |      |      | 0.40 |      |
| Clearance Time (s)                |      | 3.0  |       | 3.0   | 3.0  |                      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |      | 1539 |       | 323   | 1719 |                      |      |      |      |      | 1927 |      |
| v/s Ratio Prot                    |      | 0.20 |       |       | 0.12 |                      |      |      |      |      |      |      |
| v/s Ratio Perm                    |      |      |       | c0.30 |      |                      |      |      |      |      | 0.31 |      |
| v/c Ratio                         |      | 0.41 |       | 0.61  | 0.24 |                      |      |      |      |      | 0.77 |      |
| Uniform Delay, d1                 |      | 11.6 |       | 13.2  | 10.5 |                      |      |      |      |      | 18.2 |      |
| Progression Factor                |      | 0.82 |       | 0.52  | 0.31 |                      |      |      |      |      | 0.24 |      |
| Incremental Delay, d2             |      | 0.6  |       | 7.7   | 0.3  |                      |      |      |      |      | 2.7  |      |
| Delay (s)                         |      | 10.1 |       | 14.6  | 3.5  |                      |      |      |      |      | 7.2  |      |
| Level of Service                  |      | B    |       | B     | A    |                      |      |      |      |      | A    |      |
| Approach Delay (s)                |      | 10.1 |       |       | 7.1  |                      |      | 0.0  |      |      | 7.2  |      |
| Approach LOS                      |      | B    |       |       | A    |                      |      | A    |      |      | A    |      |
| <b>Intersection Summary</b>       |      |      |       |       |      |                      |      |      |      |      |      |      |
| HCM Average Control Delay         |      |      | 7.8   |       |      | HCM Level of Service |      |      |      |      | A    |      |
| HCM Volume to Capacity ratio      |      |      | 0.69  |       |      |                      |      |      |      |      |      |      |
| Actuated Cycle Length (s)         |      |      | 70.0  |       |      | Sum of lost time (s) |      |      |      | 8.0  |      |      |
| Intersection Capacity Utilization |      |      | 69.5% |       |      | ICU Level of Service |      |      |      |      | C    |      |
| Analysis Period (min)             |      |      | 15    |       |      |                      |      |      |      |      |      |      |
| c Critical Lane Group             |      |      |       |       |      |                      |      |      |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
5890: Capitol & 26th St

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|-------|------|
| Lane Configurations    | ↖    | ↗    |      | ↖    | ↗     |      |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0  | 4.0  |      | 4.0  | 4.0   |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor      | 1.00 | 1.00 |      | 1.00 | 1.00  |      |      | 1.00 |      |      | 1.00  |      |
| Frt                    | 1.00 | 0.99 |      | 1.00 | 0.99  |      |      | 0.98 |      |      | 0.99  |      |
| Flt Protected          | 0.95 | 1.00 |      | 0.95 | 1.00  |      |      | 0.99 |      |      | 0.98  |      |
| Satd. Flow (prot)      | 1770 | 1666 |      | 1770 | 1663  |      |      | 1620 |      |      | 1623  |      |
| Flt Permitted          | 0.42 | 1.00 |      | 0.49 | 1.00  |      |      | 0.95 |      |      | 0.91  |      |
| Satd. Flow (perm)      | 784  | 1666 |      | 910  | 1663  |      |      | 1558 |      |      | 1497  |      |
| Volume (vph)           | 12   | 354  | 15   | 22   | 421   | 23   | 17   | 49   | 14   | 34   | 50    | 10   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 12   | 354  | 15   | 22   | 421   | 23   | 17   | 49   | 14   | 34   | 50    | 10   |
| RTOR Reduction (vph)   | 0    | 3    | 0    | 0    | 4     | 0    | 0    | 9    | 0    | 0    | 7     | 0    |
| Lane Group Flow (vph)  | 12   | 366  | 0    | 22   | 440   | 0    | 0    | 71   | 0    | 0    | 87    | 0    |
| Parking (#/hr)         |      | 0    | 0    |      | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Turn Type              | Perm |      |      | Perm |       |      | Perm |      |      | Perm |       |      |
| Protected Phases       |      | 4    |      |      | 8     |      |      | 2    |      |      | 6     |      |
| Permitted Phases       | 4    |      |      | 8    |       |      | 2    |      |      | 6    |       |      |
| Actuated Green, G (s)  | 26.0 | 26.0 |      | 26.0 | 26.0  |      |      | 18.0 |      |      | 18.0  |      |
| Effective Green, g (s) | 25.0 | 25.0 |      | 25.0 | 25.0  |      |      | 17.0 |      |      | 17.0  |      |
| Actuated g/C Ratio     | 0.50 | 0.50 |      | 0.50 | 0.50  |      |      | 0.34 |      |      | 0.34  |      |
| Clearance Time (s)     | 3.0  | 3.0  |      | 3.0  | 3.0   |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)     | 392  | 833  |      | 455  | 832   |      |      | 530  |      |      | 509   |      |
| v/s Ratio Prot         |      | 0.22 |      |      | c0.26 |      |      |      |      |      |       |      |
| v/s Ratio Perm         | 0.02 |      |      | 0.02 |       |      |      | 0.05 |      |      | c0.06 |      |
| v/c Ratio              | 0.03 | 0.44 |      | 0.05 | 0.53  |      |      | 0.13 |      |      | 0.17  |      |
| Uniform Delay, d1      | 6.3  | 8.0  |      | 6.4  | 8.5   |      |      | 11.4 |      |      | 11.6  |      |
| Progression Factor     | 1.00 | 1.00 |      | 1.00 | 1.00  |      |      | 1.00 |      |      | 0.68  |      |
| Incremental Delay, d2  | 0.1  | 1.7  |      | 0.2  | 2.4   |      |      | 0.5  |      |      | 0.7   |      |
| Delay (s)              | 6.5  | 9.7  |      | 6.6  | 10.9  |      |      | 11.9 |      |      | 8.6   |      |
| Level of Service       | A    | A    |      | A    | B     |      |      | B    |      |      | A     |      |
| Approach Delay (s)     |      | 9.6  |      |      | 10.7  |      |      | 11.9 |      |      | 8.6   |      |
| Approach LOS           |      | A    |      |      | B     |      |      | B    |      |      | A     |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.2  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.38  |                      |     |
| Actuated Cycle Length (s)         | 50.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 38.9% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6481: J Street & 28th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |  |
|------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|--|
| Lane Configurations    |      | ↔↔↔  |      |      |      |      |      | ↔     |      |      |      | ↔    |  |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |  |
| Total Lost time (s)    |      | 4.0  |      |      |      |      |      | 4.0   |      |      | 4.0  |      |  |
| Lane Util. Factor      |      | 0.91 |      |      |      |      |      | 1.00  |      |      | 1.00 |      |  |
| Frt                    |      | 0.99 |      |      |      |      |      | 0.93  |      |      | 1.00 |      |  |
| Flt Protected          |      | 1.00 |      |      |      |      |      | 1.00  |      |      | 0.99 |      |  |
| Satd. Flow (prot)      |      | 4879 |      |      |      |      |      | 1553  |      |      | 1657 |      |  |
| Flt Permitted          |      | 1.00 |      |      |      |      |      | 1.00  |      |      | 0.92 |      |  |
| Satd. Flow (perm)      |      | 4879 |      |      |      |      |      | 1553  |      |      | 1545 |      |  |
| Volume (vph)           | 46   | 1443 | 62   | 0    | 0    | 0    | 0    | 157   | 187  | 13   | 41   | 0    |  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |  |
| Adj. Flow (vph)        | 46   | 1443 | 62   | 0    | 0    | 0    | 0    | 157   | 187  | 13   | 41   | 0    |  |
| RTOR Reduction (vph)   | 0    | 7    | 0    | 0    | 0    | 0    | 0    | 9     | 0    | 0    | 0    | 0    |  |
| Lane Group Flow (vph)  | 0    | 1544 | 0    | 0    | 0    | 0    | 0    | 335   | 0    | 0    | 54   | 0    |  |
| Parking (#/hr)         | 0    | 0    | 0    |      |      |      |      | 0     | 0    | 0    | 0    |      |  |
| Turn Type              | Perm |      |      |      |      |      | Perm |       |      |      |      |      |  |
| Protected Phases       |      | 4    |      |      |      |      |      | 2     |      |      |      |      |  |
| Permitted Phases       | 4    |      |      |      |      |      | 6    |       |      |      |      |      |  |
| Actuated Green, G (s)  |      | 33.0 |      |      |      |      |      | 31.0  |      |      |      |      |  |
| Effective Green, g (s) |      | 32.0 |      |      |      |      |      | 30.0  |      |      |      |      |  |
| Actuated g/C Ratio     |      | 0.46 |      |      |      |      |      | 0.43  |      |      |      |      |  |
| Clearance Time (s)     |      | 3.0  |      |      |      |      |      | 3.0   |      |      |      |      |  |
| Lane Grp Cap (vph)     |      | 2230 |      |      |      |      |      | 666   |      |      |      |      |  |
| v/s Ratio Prot         |      |      |      |      |      |      |      | c0.22 |      |      |      |      |  |
| v/s Ratio Perm         |      | 0.32 |      |      |      |      |      |       |      |      |      |      |  |
| v/c Ratio              |      | 0.69 |      |      |      |      |      | 0.50  |      |      |      |      |  |
| Uniform Delay, d1      |      | 15.1 |      |      |      |      |      | 14.6  |      |      |      |      |  |
| Progression Factor     |      | 1.00 |      |      |      |      |      | 0.70  |      |      |      |      |  |
| Incremental Delay, d2  |      | 1.8  |      |      |      |      |      | 2.7   |      |      |      |      |  |
| Delay (s)              |      | 16.9 |      |      |      |      |      | 12.9  |      |      |      |      |  |
| Level of Service       |      | B    |      |      |      |      |      | B     |      |      |      |      |  |
| Approach Delay (s)     |      | 16.9 |      |      |      |      |      | 12.9  |      |      |      |      |  |
| Approach LOS           |      | B    |      |      |      |      |      | B     |      |      |      |      |  |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 16.0  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.60  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 56.6% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
6482: K Street & 28th Street

6/1/2005



| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|---------------------------|------|------|------|------|-------|------|------|-------|------|------|------|------|
| Lane Configurations       |      | ↕    | ↗    |      | ↕     | ↗    |      | ↕     | ↗    |      | ↕    | ↗    |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |      | 4.0  | 4.0  |      | 4.0   | 4.0  |      | 4.0   | 4.0  |      | 4.0  | 4.0  |
| Lane Util. Factor         |      | 1.00 | 1.00 |      | 1.00  | 1.00 |      | 1.00  | 1.00 |      | 1.00 | 1.00 |
| Fr <sub>t</sub>           |      | 1.00 | 0.85 |      | 1.00  | 0.85 |      | 1.00  | 0.85 |      | 1.00 | 0.85 |
| Fl <sub>t</sub> Protected |      | 1.00 | 1.00 |      | 1.00  | 1.00 |      | 1.00  | 1.00 |      | 0.99 | 1.00 |
| Satd. Flow (prot)         |      | 1675 | 1425 |      | 1671  | 1425 |      | 1669  | 1425 |      | 1663 | 1425 |
| Fl <sub>t</sub> Permitted |      | 0.99 | 1.00 |      | 0.97  | 1.00 |      | 0.98  | 1.00 |      | 0.95 | 1.00 |
| Satd. Flow (perm)         |      | 1664 | 1425 |      | 1618  | 1425 |      | 1636  | 1425 |      | 1587 | 1425 |
| Volume (vph)              | 7    | 390  | 21   | 34   | 524   | 95   | 15   | 156   | 104  | 22   | 115  | 31   |
| Peak-hour factor, PHF     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 7    | 390  | 21   | 34   | 524   | 95   | 15   | 156   | 104  | 22   | 115  | 31   |
| RTOR Reduction (vph)      | 0    | 0    | 8    | 0    | 0     | 30   | 0    | 0     | 74   | 0    | 0    | 22   |
| Lane Group Flow (vph)     | 0    | 397  | 13   | 0    | 558   | 65   | 0    | 171   | 30   | 0    | 137  | 9    |
| Parking (#/hr)            | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type                 | Perm |      | Perm | Perm |       | Perm | Perm |       | Perm | Perm |      | Perm |
| Protected Phases          |      | 4    |      |      | 8     |      |      | 2     |      |      | 6    |      |
| Permitted Phases          | 4    |      | 4    | 8    |       | 8    | 2    |       | 2    | 6    |      | 6    |
| Actuated Green, G (s)     |      | 43.0 | 43.0 |      | 43.0  | 43.0 |      | 21.0  | 21.0 |      | 21.0 | 21.0 |
| Effective Green, g (s)    |      | 42.0 | 42.0 |      | 42.0  | 42.0 |      | 20.0  | 20.0 |      | 20.0 | 20.0 |
| Actuated g/C Ratio        |      | 0.60 | 0.60 |      | 0.60  | 0.60 |      | 0.29  | 0.29 |      | 0.29 | 0.29 |
| Clearance Time (s)        |      | 3.0  | 3.0  |      | 3.0   | 3.0  |      | 3.0   | 3.0  |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)        |      | 998  | 855  |      | 971   | 855  |      | 467   | 407  |      | 453  | 407  |
| v/s Ratio Prot            |      |      |      |      |       |      |      |       |      |      |      |      |
| v/s Ratio Perm            |      | 0.24 | 0.01 |      | c0.34 | 0.05 |      | c0.10 | 0.02 |      | 0.09 | 0.01 |
| v/c Ratio                 |      | 0.40 | 0.01 |      | 0.57  | 0.08 |      | 0.37  | 0.07 |      | 0.30 | 0.02 |
| Uniform Delay, d1         |      | 7.4  | 5.6  |      | 8.5   | 5.9  |      | 19.9  | 18.2 |      | 19.5 | 18.0 |
| Progression Factor        |      | 1.00 | 1.00 |      | 0.50  | 0.46 |      | 0.72  | 0.05 |      | 0.89 | 0.81 |
| Incremental Delay, d2     |      | 1.2  | 0.0  |      | 2.1   | 0.2  |      | 2.0   | 0.3  |      | 1.7  | 0.1  |
| Delay (s)                 |      | 8.5  | 5.7  |      | 6.4   | 2.8  |      | 16.4  | 1.2  |      | 19.0 | 14.7 |
| Level of Service          |      | A    | A    |      | A     | A    |      | B     | A    |      | B    | B    |
| Approach Delay (s)        |      | 8.4  |      |      | 5.9   |      |      | 10.7  |      |      | 18.2 |      |
| Approach LOS              |      | A    |      |      | A     |      |      | B     |      |      | B    |      |

| Intersection Summary              |                     |                      |     |
|-----------------------------------|---------------------|----------------------|-----|
| HCM Average Control Delay         | 8.8                 | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.51                |                      |     |
| Actuated Cycle Length (s)         | 70.0                | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 80.0%               | ICU Level of Service | D   |
| Analysis Period (min)             | 15                  |                      |     |
| c                                 | Critical Lane Group |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6483: L Street & 28th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      |      | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor      |      |      |      |      | 0.95 |      |      | 1.00 |      |      | 1.00 |      |
| Frt                    |      |      |      |      | 0.98 |      |      | 1.00 |      |      | 0.98 |      |
| Flt Protected          |      |      |      |      | 0.99 |      |      | 0.99 |      |      | 1.00 |      |
| Satd. Flow (prot)      |      |      |      |      | 3264 |      |      | 1664 |      |      | 1643 |      |
| Flt Permitted          |      |      |      |      | 0.99 |      |      | 0.94 |      |      | 1.00 |      |
| Satd. Flow (perm)      |      |      |      |      | 3264 |      |      | 1581 |      |      | 1643 |      |
| Volume (vph)           | 0    | 0    | 0    | 144  | 497  | 98   | 42   | 240  | 0    | 0    | 143  | 25   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 144  | 497  | 98   | 42   | 240  | 0    | 0    | 143  | 25   |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 17   | 0    | 0    | 0    | 0    | 0    | 9    | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 722  | 0    | 0    | 282  | 0    | 0    | 159  | 0    |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Turn Type              |      |      |      | Perm |      |      | Perm |      |      |      |      |      |
| Protected Phases       |      |      |      |      | 6    |      |      | 8    |      |      | 4    |      |
| Permitted Phases       |      |      |      | 6    |      |      | 8    |      |      |      |      |      |
| Actuated Green, G (s)  |      |      |      |      | 34.0 |      |      | 30.0 |      |      | 30.0 |      |
| Effective Green, g (s) |      |      |      |      | 33.0 |      |      | 29.0 |      |      | 29.0 |      |
| Actuated g/C Ratio     |      |      |      |      | 0.47 |      |      | 0.41 |      |      | 0.41 |      |
| Clearance Time (s)     |      |      |      |      | 3.0  |      |      | 3.0  |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      |      |      |      | 1539 |      |      | 655  |      |      | 681  |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      | 0.10 |      |
| v/s Ratio Perm         |      |      |      |      | 0.22 |      |      | 0.18 |      |      |      |      |
| v/c Ratio              |      |      |      |      | 0.47 |      |      | 0.43 |      |      | 0.23 |      |
| Uniform Delay, d1      |      |      |      |      | 12.6 |      |      | 14.6 |      |      | 13.3 |      |
| Progression Factor     |      |      |      |      | 0.41 |      |      | 0.90 |      |      | 0.66 |      |
| Incremental Delay, d2  |      |      |      |      | 1.0  |      |      | 1.9  |      |      | 0.8  |      |
| Delay (s)              |      |      |      |      | 6.2  |      |      | 15.0 |      |      | 9.6  |      |
| Level of Service       |      |      |      |      | A    |      |      | B    |      |      | A    |      |
| Approach Delay (s)     |      | 0.0  |      |      | 6.2  |      |      | 15.0 |      |      | 9.6  |      |
| Approach LOS           |      | A    |      |      | A    |      |      | B    |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 8.8   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.45  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 55.0% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
6484: Capitol & 28th Street

6/1/2005



| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|---------------------------|------|------|------|------|-------|------|------|------|------|------|-------|------|
| Lane Configurations       |      | ↕    |      | ↖    | ↗     |      |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)       |      | 4.0  |      | 4.0  | 4.0   |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor         |      | 1.00 |      | 1.00 | 1.00  |      |      | 1.00 |      |      | 1.00  |      |
| Fr <sub>t</sub>           |      | 0.99 |      | 1.00 | 0.99  |      |      | 0.92 |      |      | 1.00  |      |
| Fl <sub>t</sub> Protected |      | 1.00 |      | 0.95 | 1.00  |      |      | 1.00 |      |      | 0.98  |      |
| Satd. Flow (prot)         |      | 1665 |      | 1770 | 1655  |      |      | 1541 |      |      | 1639  |      |
| Fl <sub>t</sub> Permitted |      | 0.99 |      | 0.41 | 1.00  |      |      | 0.97 |      |      | 0.69  |      |
| Satd. Flow (perm)         |      | 1651 |      | 762  | 1655  |      |      | 1494 |      |      | 1153  |      |
| Volume (vph)              | 10   | 435  | 19   | 60   | 456   | 42   | 30   | 153  | 248  | 121  | 179   | 7    |
| Peak-hour factor, PHF     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)           | 10   | 435  | 19   | 60   | 456   | 42   | 30   | 153  | 248  | 121  | 179   | 7    |
| RTOR Reduction (vph)      | 0    | 2    | 0    | 0    | 5     | 0    | 0    | 70   | 0    | 0    | 1     | 0    |
| Lane Group Flow (vph)     | 0    | 462  | 0    | 60   | 493   | 0    | 0    | 361  | 0    | 0    | 306   | 0    |
| Parking (#/hr)            | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Turn Type                 | Perm |      |      | Perm |       |      | Perm |      |      | Perm |       |      |
| Protected Phases          |      | 4    |      |      | 8     |      |      | 2    |      |      | 6     |      |
| Permitted Phases          | 4    |      |      | 8    |       |      | 2    |      |      | 6    |       |      |
| Actuated Green, G (s)     |      | 33.0 |      | 33.0 | 33.0  |      |      | 31.0 |      |      | 31.0  |      |
| Effective Green, g (s)    |      | 32.0 |      | 32.0 | 32.0  |      |      | 30.0 |      |      | 30.0  |      |
| Actuated g/C Ratio        |      | 0.46 |      | 0.46 | 0.46  |      |      | 0.43 |      |      | 0.43  |      |
| Clearance Time (s)        |      | 3.0  |      | 3.0  | 3.0   |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)        |      | 755  |      | 348  | 757   |      |      | 640  |      |      | 494   |      |
| v/s Ratio Prot            |      |      |      |      | c0.30 |      |      |      |      |      |       |      |
| v/s Ratio Perm            |      | 0.28 |      | 0.08 |       |      |      | 0.24 |      |      | c0.27 |      |
| v/c Ratio                 |      | 0.61 |      | 0.17 | 0.65  |      |      | 0.56 |      |      | 0.62  |      |
| Uniform Delay, d1         |      | 14.3 |      | 11.2 | 14.7  |      |      | 15.1 |      |      | 15.6  |      |
| Progression Factor        |      | 1.00 |      | 0.31 | 0.31  |      |      | 0.84 |      |      | 0.91  |      |
| Incremental Delay, d2     |      | 3.7  |      | 1.0  | 4.1   |      |      | 3.5  |      |      | 5.5   |      |
| Delay (s)                 |      | 18.0 |      | 4.5  | 8.6   |      |      | 16.2 |      |      | 19.6  |      |
| Level of Service          |      | B    |      | A    | A     |      |      | B    |      |      | B     |      |
| Approach Delay (s)        |      | 18.0 |      |      | 8.2   |      |      | 16.2 |      |      | 19.6  |      |
| Approach LOS              |      | B    |      |      | A     |      |      | B    |      |      | B     |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 14.7  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.64  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 89.1% | ICU Level of Service | E   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis

6485: N Street & 28th Street

6/1/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|-------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations    |      | ↕↕    |      |      | ↕↕   |      |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      | 4.0  |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor      |      | 0.95  |      |      | 1.00 |      |      | 1.00 |      |      | 1.00  |      |
| Fr't                   |      | 1.00  |      |      | 0.89 |      |      | 0.96 |      |      | 1.00  |      |
| Flt Protected          |      | 0.99  |      |      | 0.99 |      |      | 1.00 |      |      | 0.97  |      |
| Satd. Flow (prot)      |      | 3326  |      |      | 1480 |      |      | 1611 |      |      | 1623  |      |
| Flt Permitted          |      | 0.89  |      |      | 0.83 |      |      | 1.00 |      |      | 0.70  |      |
| Satd. Flow (perm)      |      | 2966  |      |      | 1234 |      |      | 1611 |      |      | 1179  |      |
| Volume (vph)           | 100  | 661   | 24   | 32   | 0    | 134  | 0    | 125  | 51   | 195  | 100   | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 100  | 661   | 24   | 32   | 0    | 134  | 0    | 125  | 51   | 195  | 100   | 0    |
| RTOR Reduction (vph)   | 0    | 3     | 0    | 0    | 78   | 0    | 0    | 21   | 0    | 0    | 0     | 0    |
| Lane Group Flow (vph)  | 0    | 782   | 0    | 0    | 88   | 0    | 0    | 155  | 0    | 0    | 295   | 0    |
| Parking (#/hr)         | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Turn Type              | Perm |       | Perm |      |      |      | Perm |      |      |      |       |      |
| Protected Phases       |      | 2     |      |      | 6    |      |      | 8    |      |      | 4     |      |
| Permitted Phases       | 2    |       |      | 6    |      |      |      |      | 4    |      |       |      |
| Actuated Green, G (s)  |      | 30.0  |      |      | 30.0 |      |      | 34.0 |      |      | 34.0  |      |
| Effective Green, g (s) |      | 29.0  |      |      | 29.0 |      |      | 33.0 |      |      | 33.0  |      |
| Actuated g/C Ratio     |      | 0.41  |      |      | 0.41 |      |      | 0.47 |      |      | 0.47  |      |
| Clearance Time (s)     |      | 3.0   |      |      | 3.0  |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)     |      | 1229  |      |      | 511  |      |      | 759  |      |      | 556   |      |
| v/s Ratio Prot         |      |       |      |      |      |      |      | 0.10 |      |      |       |      |
| v/s Ratio Perm         |      | c0.26 |      |      | 0.07 |      |      |      |      |      | c0.25 |      |
| v/c Ratio              |      | 0.64  |      |      | 0.17 |      |      | 0.20 |      |      | 0.53  |      |
| Uniform Delay, d1      |      | 16.3  |      |      | 12.9 |      |      | 10.8 |      |      | 13.0  |      |
| Progression Factor     |      | 1.00  |      |      | 4.08 |      |      | 1.00 |      |      | 0.72  |      |
| Incremental Delay, d2  |      | 2.5   |      |      | 0.5  |      |      | 0.6  |      |      | 3.3   |      |
| Delay (s)              |      | 18.8  |      |      | 53.3 |      |      | 11.4 |      |      | 12.6  |      |
| Level of Service       |      | B     |      |      | D    |      |      | B    |      |      | B     |      |
| Approach Delay (s)     |      | 18.8  |      |      | 53.3 |      |      | 11.4 |      |      | 12.6  |      |
| Approach LOS           |      | B     |      |      | D    |      |      | B    |      |      | B     |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 20.6  | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 0.58  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 71.1% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
 6511: K Street & Alhambra

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↔    | ↗    |      | ↔    |      |      | ↔    |      |      | ↔    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  |      | 4.0  |      |      | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00 | 1.00 |      | 1.00 |      |      | 0.95 |      |      | 0.95 |      |
| Frts                   |      | 1.00 | 0.85 |      | 0.99 |      |      | 0.98 |      |      | 0.96 |      |
| Flt Protected          |      | 0.98 | 1.00 |      | 0.99 |      |      | 0.99 |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 1819 | 1583 |      | 1816 |      |      | 3420 |      |      | 3400 |      |
| Flt Permitted          |      | 0.81 | 1.00 |      | 0.91 |      |      | 0.62 |      |      | 0.95 |      |
| Satd. Flow (perm)      |      | 1512 | 1583 |      | 1665 |      |      | 2140 |      |      | 3228 |      |
| Volume (vph)           | 78   | 85   | 184  | 40   | 99   | 14   | 113  | 350  | 87   | 12   | 782  | 277  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 78   | 85   | 184  | 40   | 99   | 14   | 113  | 350  | 87   | 12   | 782  | 277  |
| RTOR Reduction (vph)   | 0    | 0    | 108  | 0    | 5    | 0    | 0    | 22   | 0    | 0    | 50   | 0    |
| Lane Group Flow (vph)  | 0    | 163  | 76   | 0    | 148  | 0    | 0    | 528  | 0    | 0    | 1021 | 0    |
| Turn Type              | Perm |      | Perm | Perm |      |      | Perm |      |      | Perm |      |      |
| Protected Phases       |      | 4    |      |      | 8    |      |      | 2    |      |      | 6    |      |
| Permitted Phases       | 4    |      | 4    | 8    |      |      | 2    |      |      | 6    |      |      |
| Actuated Green, G (s)  |      | 25.0 | 25.0 |      | 25.0 |      |      | 39.0 |      |      | 39.0 |      |
| Effective Green, g (s) |      | 24.0 | 24.0 |      | 24.0 |      |      | 38.0 |      |      | 38.0 |      |
| Actuated g/C Ratio     |      | 0.34 | 0.34 |      | 0.34 |      |      | 0.54 |      |      | 0.54 |      |
| Clearance Time (s)     |      | 3.0  | 3.0  |      | 3.0  |      |      | 3.0  |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 518  | 543  |      | 571  |      |      | 1162 |      |      | 1752 |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      | 0.11 | 0.05 |      | 0.09 |      |      | 0.25 |      |      | 0.32 |      |
| v/c Ratio              |      | 0.31 | 0.14 |      | 0.26 |      |      | 0.45 |      |      | 0.58 |      |
| Uniform Delay, d1      |      | 16.9 | 15.9 |      | 16.6 |      |      | 9.7  |      |      | 10.7 |      |
| Progression Factor     |      | 0.83 | 0.81 |      | 1.00 |      |      | 0.33 |      |      | 0.54 |      |
| Incremental Delay, d2  |      | 1.5  | 0.5  |      | 1.1  |      |      | 0.9  |      |      | 1.0  |      |
| Delay (s)              |      | 15.5 | 13.4 |      | 17.7 |      |      | 4.0  |      |      | 6.8  |      |
| Level of Service       |      | B    | B    |      | B    |      |      | A    |      |      | A    |      |
| Approach Delay (s)     |      | 14.4 |      |      | 17.7 |      |      | 4.0  |      |      | 6.8  |      |
| Approach LOS           |      | B    |      |      | B    |      |      | A    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 8.1   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.48  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 72.0% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 9622: K Street & 30th Street

6/1/2005



| Movement                          | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations               | ↖    | ↗    |      |      | ↖    | ↗    |      | ↖↗↘  |      |      |      |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               | 4.0  | 4.0  |      |      | 4.0  | 4.0  |      | 4.0  |      |      |      |      |
| Lane Util. Factor                 | 1.00 | 1.00 |      |      | 1.00 | 1.00 |      | 0.91 |      |      |      |      |
| Fr <sub>t</sub>                   | 1.00 | 1.00 |      |      | 1.00 | 0.85 |      | 0.98 |      |      |      |      |
| Flt Protected                     | 0.95 | 1.00 |      |      | 1.00 | 1.00 |      | 0.99 |      |      |      |      |
| Satd. Flow (prot)                 | 1770 | 1863 |      |      | 1863 | 1583 |      | 4957 |      |      |      |      |
| Flt Permitted                     | 0.39 | 1.00 |      |      | 1.00 | 1.00 |      | 0.99 |      |      |      |      |
| Satd. Flow (perm)                 | 726  | 1863 |      |      | 1863 | 1583 |      | 4957 |      |      |      |      |
| Volume (vph)                      | 145  | 259  | 0    | 0    | 463  | 24   | 210  | 749  | 112  | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 145  | 259  | 0    | 0    | 463  | 24   | 210  | 749  | 112  | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0    | 0    | 0    | 0    | 0    | 12   | 0    | 21   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 145  | 259  | 0    | 0    | 463  | 12   | 0    | 1050 | 0    | 0    | 0    | 0    |
| Turn Type                         | Perm |      |      | Perm |      |      | Perm |      |      |      |      |      |
| Protected Phases                  | 4    |      |      | 8    |      |      | 2    |      |      |      |      |      |
| Permitted Phases                  | 4    |      |      | 8    |      |      | 2    |      |      |      |      |      |
| Actuated Green, G (s)             | 37.0 | 37.0 |      |      | 37.0 | 37.0 |      | 27.0 |      |      |      |      |
| Effective Green, g (s)            | 36.0 | 36.0 |      |      | 36.0 | 36.0 |      | 26.0 |      |      |      |      |
| Actuated g/C Ratio                | 0.51 | 0.51 |      |      | 0.51 | 0.51 |      | 0.37 |      |      |      |      |
| Clearance Time (s)                | 3.0  | 3.0  |      |      | 3.0  | 3.0  |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)                | 373  | 958  |      |      | 958  | 814  |      | 1841 |      |      |      |      |
| v/s Ratio Prot                    |      | 0.14 |      |      | 0.25 |      |      |      |      |      |      |      |
| v/s Ratio Perm                    | 0.20 |      |      |      |      | 0.01 |      | 0.21 |      |      |      |      |
| v/c Ratio                         | 0.39 | 0.27 |      |      | 0.48 | 0.02 |      | 0.57 |      |      |      |      |
| Uniform Delay, d <sub>1</sub>     | 10.3 | 9.6  |      |      | 11.0 | 8.3  |      | 17.5 |      |      |      |      |
| Progression Factor                | 0.53 | 0.56 |      |      | 0.65 | 0.50 |      | 0.48 |      |      |      |      |
| Incremental Delay, d <sub>2</sub> | 2.9  | 0.7  |      |      | 1.5  | 0.0  |      | 1.1  |      |      |      |      |
| Delay (s)                         | 8.3  | 6.0  |      |      | 8.6  | 4.2  |      | 9.5  |      |      |      |      |
| Level of Service                  | A    | A    |      |      | A    | A    |      | A    |      |      |      |      |
| Approach Delay (s)                |      | 6.8  |      |      | 8.4  |      |      | 9.5  |      |      | 0.0  |      |
| Approach LOS                      |      | A    |      |      | A    |      |      | A    |      |      | A    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 8.7   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.52  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 63.6% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

EXISTING PLUS TRINITY PROJECT WITH SMART PLAN

AM Peak Hour

Signalized Intersections

(am3)



HCM Signalized Intersection Capacity Analysis  
 2004: L Street & 21th Street

7/11/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT  | WBR  | NBL  | NBT                  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|-------|------|------|------|------|----------------------|------|------|------|------|
| Lane Configurations               |      |      |       |      | ↑↑   |      |      | ↑↑↑                  |      |      |      |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      |      |       |      | 4.0  |      |      | 4.0                  |      |      |      |      |
| Lane Util. Factor                 |      |      |       |      | 0.95 |      |      | 0.91                 |      |      |      |      |
| Fr <sub>t</sub>                   |      |      |       |      | 0.97 |      |      | 1.00                 |      |      |      |      |
| Fl <sub>t</sub> Protected         |      |      |       |      | 1.00 |      |      | 0.99                 |      |      |      |      |
| Satd. Flow (prot)                 |      |      |       |      | 3267 |      |      | 4880                 |      |      |      |      |
| Fl <sub>t</sub> Permitted         |      |      |       |      | 1.00 |      |      | 0.99                 |      |      |      |      |
| Satd. Flow (perm)                 |      |      |       |      | 3267 |      |      | 4880                 |      |      |      |      |
| Volume (vph)                      | 0    | 0    | 0     | 0    | 611  | 142  | 174  | 1016                 | 0    | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 0    | 611  | 142  | 174  | 1016                 | 0    | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 0    | 20   | 0    | 0    | 48                   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 0    | 733  | 0    | 0    | 1142                 | 0    | 0    | 0    | 0    |
| Parking (#/hr)                    | 0    | 0    |       |      | 0    | 0    | 0    | 0                    | 0    |      |      |      |
| Turn Type                         |      |      |       |      |      |      |      | Perm                 |      |      |      |      |
| Protected Phases                  |      |      |       |      | 6    |      |      | 8                    |      |      |      |      |
| Permitted Phases                  |      |      |       |      |      |      |      | 8                    |      |      |      |      |
| Actuated Green, G (s)             |      |      |       |      | 23.0 |      |      | 21.0                 |      |      |      |      |
| Effective Green, g (s)            |      |      |       |      | 22.0 |      |      | 20.0                 |      |      |      |      |
| Actuated g/C Ratio                |      |      |       |      | 0.44 |      |      | 0.40                 |      |      |      |      |
| Clearance Time (s)                |      |      |       |      | 3.0  |      |      | 3.0                  |      |      |      |      |
| Lane Grp Cap (vph)                |      |      |       |      | 1437 |      |      | 1952                 |      |      |      |      |
| v/s Ratio Prot                    |      |      |       |      | 0.22 |      |      |                      |      |      |      |      |
| v/s Ratio Perm                    |      |      |       |      |      |      |      | 0.23                 |      |      |      |      |
| v/c Ratio                         |      |      |       |      | 0.51 |      |      | 0.59                 |      |      |      |      |
| Uniform Delay, d <sub>1</sub>     |      |      |       |      | 10.1 |      |      | 11.7                 |      |      |      |      |
| Progression Factor                |      |      |       |      | 0.15 |      |      | 1.00                 |      |      |      |      |
| Incremental Delay, d <sub>2</sub> |      |      |       |      | 1.2  |      |      | 1.3                  |      |      |      |      |
| Delay (s)                         |      |      |       |      | 2.7  |      |      | 13.0                 |      |      |      |      |
| Level of Service                  |      |      |       |      | A    |      |      | B                    |      |      |      |      |
| Approach Delay (s)                |      | 0.0  |       |      | 2.7  |      |      | 13.0                 |      |      | 0.0  |      |
| Approach LOS                      |      | A    |       |      | A    |      |      | B                    |      |      | A    |      |
| <b>Intersection Summary</b>       |      |      |       |      |      |      |      |                      |      |      |      |      |
| HCM Average Control Delay         |      |      | 9.0   |      |      |      |      | HCM Level of Service |      |      | A    |      |
| HCM Volume to Capacity ratio      |      |      | 0.55  |      |      |      |      |                      |      |      |      |      |
| Actuated Cycle Length (s)         |      |      | 50.0  |      |      |      |      | Sum of lost time (s) |      |      | 8.0  |      |
| Intersection Capacity Utilization |      |      | 51.2% |      |      |      |      | ICU Level of Service |      |      | A    |      |
| Analysis Period (min)             |      |      | 15    |      |      |      |      |                      |      |      |      |      |
| c Critical Lane Group             |      |      |       |      |      |      |      |                      |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
 2012: J Street & 21th Street

7/11/2005



| Movement                          | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations               |      | ↑↑↑  |      |      |      |      |      | ↑↑↑   |      |      |      |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0  |      |      |      |      |      | 4.0   |      |      |      |      |
| Lane Util. Factor                 |      | 0.91 |      |      |      |      |      | 0.91  |      |      |      |      |
| Fr <sub>t</sub>                   |      | 1.00 |      |      |      |      |      | 0.97  |      |      |      |      |
| Fl <sub>t</sub> Protected         |      | 1.00 |      |      |      |      |      | 1.00  |      |      |      |      |
| Satd. Flow (prot)                 |      | 4907 |      |      |      |      |      | 4785  |      |      |      |      |
| Fl <sub>t</sub> Permitted         |      | 1.00 |      |      |      |      |      | 1.00  |      |      |      |      |
| Satd. Flow (perm)                 |      | 4907 |      |      |      |      |      | 4785  |      |      |      |      |
| Volume (vph)                      | 28   | 745  | 0    | 0    | 0    | 0    | 0    | 795   | 171  | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 28   | 745  | 0    | 0    | 0    | 0    | 0    | 795   | 171  | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0    | 8    | 0    | 0    | 0    | 0    | 0    | 52    | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 0    | 765  | 0    | 0    | 0    | 0    | 0    | 914   | 0    | 0    | 0    | 0    |
| Parking (#/hr)                    | 0    | 0    |      |      |      |      |      | 0     | 0    |      |      |      |
| Turn Type                         | Perm |      |      |      |      |      |      |       |      |      |      |      |
| Protected Phases                  |      | 2    |      |      |      |      |      | 8     |      |      |      |      |
| Permitted Phases                  | 2    |      |      |      |      |      |      |       |      |      |      |      |
| Actuated Green, G (s)             |      | 21.0 |      |      |      |      |      | 23.0  |      |      |      |      |
| Effective Green, g (s)            |      | 20.0 |      |      |      |      |      | 22.0  |      |      |      |      |
| Actuated g/C Ratio                |      | 0.40 |      |      |      |      |      | 0.44  |      |      |      |      |
| Clearance Time (s)                |      | 3.0  |      |      |      |      |      | 3.0   |      |      |      |      |
| Lane Grp Cap (vph)                |      | 1963 |      |      |      |      |      | 2105  |      |      |      |      |
| v/s Ratio Prot                    |      |      |      |      |      |      |      | c0.19 |      |      |      |      |
| v/s Ratio Perm                    |      | 0.16 |      |      |      |      |      |       |      |      |      |      |
| v/c Ratio                         |      | 0.39 |      |      |      |      |      | 0.43  |      |      |      |      |
| Uniform Delay, d <sub>1</sub>     |      | 10.7 |      |      |      |      |      | 9.7   |      |      |      |      |
| Progression Factor                |      | 0.38 |      |      |      |      |      | 0.21  |      |      |      |      |
| Incremental Delay, d <sub>2</sub> |      | 0.6  |      |      |      |      |      | 0.5   |      |      |      |      |
| Delay (s)                         |      | 4.6  |      |      |      |      |      | 2.6   |      |      |      |      |
| Level of Service                  |      | A    |      |      |      |      |      | A     |      |      |      |      |
| Approach Delay (s)                |      | 4.6  |      |      | 0.0  |      |      | 2.6   |      |      | 0.0  |      |
| Approach LOS                      |      | A    |      |      | A    |      |      | A     |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 3.4   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.41  |                      |     |
| Actuated Cycle Length (s)         | 50.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 40.8% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 2074: J Street & 19th Street

7/11/2005



| Movement                          | EBL  | EBT   | EBR  | WBL  | WBT                  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|-------|------|------|----------------------|------|------|------|------|------|------|------|
| Lane Configurations               |      | ↑↑↑   |      |      |                      |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0   |      |      |                      |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor                 |      | 0.91  |      |      |                      |      |      |      |      |      | 0.91 |      |
| Fr <sub>t</sub>                   |      | 0.98  |      |      |                      |      |      |      |      |      | 1.00 |      |
| Fl <sub>t</sub> Protected         |      | 1.00  |      |      |                      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (prot)                 |      | 4832  |      |      |                      |      |      |      |      |      | 4849 |      |
| Fl <sub>t</sub> Permitted         |      | 1.00  |      |      |                      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (perm)                 |      | 4832  |      |      |                      |      |      |      |      |      | 4849 |      |
| Volume (vph)                      | 0    | 745   | 96   | 0    | 0                    | 0    | 0    | 0    | 0    | 103  | 273  | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00 | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 745   | 96   | 0    | 0                    | 0    | 0    | 0    | 0    | 103  | 273  | 0    |
| RTOR Reduction (vph)              | 0    | 32    | 0    | 0    | 0                    | 0    | 0    | 0    | 0    | 0    | 62   | 0    |
| Lane Group Flow (vph)             | 0    | 809   | 0    | 0    | 0                    | 0    | 0    | 0    | 0    | 0    | 314  | 0    |
| Parking (#/hr)                    |      | 0     | 0    |      |                      |      |      |      |      | 0    | 0    |      |
| Turn Type                         |      |       |      |      |                      |      |      |      |      | Perm |      |      |
| Protected Phases                  |      | 2     |      |      |                      |      |      |      |      |      | 4    |      |
| Permitted Phases                  |      |       |      |      |                      |      |      |      |      | 4    |      |      |
| Actuated Green, G (s)             |      | 23.0  |      |      |                      |      |      |      |      |      | 21.0 |      |
| Effective Green, g (s)            |      | 22.0  |      |      |                      |      |      |      |      |      | 20.0 |      |
| Actuated g/C Ratio                |      | 0.44  |      |      |                      |      |      |      |      |      | 0.40 |      |
| Clearance Time (s)                |      | 3.0   |      |      |                      |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |      | 2126  |      |      |                      |      |      |      |      |      | 1940 |      |
| v/s Ratio Prot                    |      | 0.17  |      |      |                      |      |      |      |      |      |      |      |
| v/s Ratio Perm                    |      |       |      |      |                      |      |      |      |      |      | 0.06 |      |
| v/c Ratio                         |      | 0.38  |      |      |                      |      |      |      |      |      | 0.16 |      |
| Uniform Delay, d <sub>1</sub>     |      | 9.4   |      |      |                      |      |      |      |      |      | 9.6  |      |
| Progression Factor                |      | 1.00  |      |      |                      |      |      |      |      |      | 1.00 |      |
| Incremental Delay, d <sub>2</sub> |      | 0.5   |      |      |                      |      |      |      |      |      | 0.2  |      |
| Delay (s)                         |      | 9.9   |      |      |                      |      |      |      |      |      | 9.8  |      |
| Level of Service                  |      | A     |      |      |                      |      |      |      |      |      | A    |      |
| Approach Delay (s)                |      | 9.9   |      |      | 0.0                  |      |      | 0.0  |      |      | 9.8  |      |
| Approach LOS                      |      | A     |      |      | A                    |      |      | A    |      |      | A    |      |
| <b>Intersection Summary</b>       |      |       |      |      |                      |      |      |      |      |      |      |      |
| HCM Average Control Delay         |      | 9.9   |      |      | HCM Level of Service |      |      | A    |      |      |      |      |
| HCM Volume to Capacity ratio      |      | 0.28  |      |      |                      |      |      |      |      |      |      |      |
| Actuated Cycle Length (s)         |      | 50.0  |      |      | Sum of lost time (s) |      |      | 8.0  |      |      |      |      |
| Intersection Capacity Utilization |      | 30.6% |      |      | ICU Level of Service |      |      | A    |      |      |      |      |
| Analysis Period (min)             |      | 15    |      |      |                      |      |      |      |      |      |      |      |
| c Critical Lane Group             |      |       |      |      |                      |      |      |      |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
 2088: L Street & 29th Street

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|-------|------|
| Lane Configurations    |      |      |      | ↖    | ↗     |      |      |      |      |      | ↖↗    | ↖    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      |      |      | 4.0  | 4.0   |      |      |      |      |      | 4.0   | 4.0  |
| Lane Util. Factor      |      |      |      | 1.00 | 0.95  |      |      |      |      |      | 0.86  | 0.86 |
| Fr <sub>t</sub>        |      |      |      | 1.00 | 1.00  |      |      |      |      |      | 1.00  | 0.85 |
| Flt Protected          |      |      |      | 0.95 | 1.00  |      |      |      |      |      | 1.00  | 1.00 |
| Satd. Flow (prot)      |      |      |      | 1770 | 3539  |      |      |      |      |      | 4646  | 1226 |
| Flt Permitted          |      |      |      | 0.95 | 1.00  |      |      |      |      |      | 1.00  | 1.00 |
| Satd. Flow (perm)      |      |      |      | 1770 | 3539  |      |      |      |      |      | 4646  | 1226 |
| Volume (vph)           | 0    | 0    | 0    | 156  | 583   | 0    | 0    | 0    | 0    | 0    | 789   | 206  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 156  | 583   | 0    | 0    | 0    | 0    | 0    | 789   | 206  |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 57   | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 108  |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 99   | 583   | 0    | 0    | 0    | 0    | 0    | 789   | 98   |
| Parking (#/hr)         |      |      | 0    |      |       |      |      |      |      |      | 0     | 0    |
| Turn Type              |      |      |      | Perm |       |      |      |      |      |      |       | Perm |
| Protected Phases       |      |      |      |      | 6     |      |      |      |      |      |       | 4    |
| Permitted Phases       |      |      |      | 6    |       |      |      |      |      |      |       | 4    |
| Actuated Green, G (s)  |      |      |      | 32.0 | 32.0  |      |      |      |      |      | 32.0  | 32.0 |
| Effective Green, g (s) |      |      |      | 31.0 | 31.0  |      |      |      |      |      | 31.0  | 31.0 |
| Actuated g/C Ratio     |      |      |      | 0.44 | 0.44  |      |      |      |      |      | 0.44  | 0.44 |
| Clearance Time (s)     |      |      |      | 3.0  | 3.0   |      |      |      |      |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)     |      |      |      | 784  | 1567  |      |      |      |      |      | 2058  | 543  |
| v/s Ratio Prot         |      |      |      |      | c0.16 |      |      |      |      |      | c0.17 |      |
| v/s Ratio Perm         |      |      |      | 0.06 |       |      |      |      |      |      |       | 0.08 |
| v/c Ratio              |      |      |      | 0.13 | 0.37  |      |      |      |      |      | 0.38  | 0.18 |
| Uniform Delay, d1      |      |      |      | 11.5 | 13.0  |      |      |      |      |      | 13.1  | 11.8 |
| Progression Factor     |      |      |      | 0.12 | 0.43  |      |      |      |      |      | 0.57  | 0.26 |
| Incremental Delay, d2  |      |      |      | 0.3  | 0.7   |      |      |      |      |      | 0.5   | 0.6  |
| Delay (s)              |      |      |      | 1.7  | 6.3   |      |      |      |      |      | 7.9   | 3.7  |
| Level of Service       |      |      |      | A    | A     |      |      |      |      |      | A     | A    |
| Approach Delay (s)     |      | 0.0  |      |      | 5.3   |      |      | 0.0  |      |      | 7.0   |      |
| Approach LOS           |      | A    |      |      | A     |      |      | A    |      |      | A     |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 6.3   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.38  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 39.6% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
 2239: L Street & Alhambra

7/11/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT  | WBR  | NBL  | NBT                  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|-------|------|------|------|------|----------------------|------|------|------|------|
| Lane Configurations               |      |      |       |      | ↕    |      |      | ↕                    |      |      | ↕    | ↕    |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      |      |       |      | 4.0  |      |      | 4.0                  |      |      | 4.0  | 4.0  |
| Lane Util. Factor                 |      |      |       |      | 1.00 |      |      | 1.00                 |      |      | 1.00 | 1.00 |
| Fr <sub>t</sub>                   |      |      |       |      | 0.98 |      |      | 0.98                 |      |      | 1.00 | 0.85 |
| Flt Protected                     |      |      |       |      | 1.00 |      |      | 1.00                 |      |      | 0.99 | 1.00 |
| Satd. Flow (prot)                 |      |      |       |      | 1638 |      |      | 1634                 |      |      | 1851 | 1425 |
| Flt Permitted                     |      |      |       |      | 1.00 |      |      | 0.92                 |      |      | 0.89 | 1.00 |
| Satd. Flow (perm)                 |      |      |       |      | 1638 |      |      | 1516                 |      |      | 1650 | 1425 |
| Volume (vph)                      | 0    | 0    | 0     | 10   | 89   | 16   | 50   | 412                  | 86   | 72   | 489  | 346  |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 10   | 89   | 16   | 50   | 412                  | 86   | 72   | 489  | 346  |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 0    | 8    | 0    | 0    | 10                   | 0    | 0    | 0    | 143  |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 0    | 107  | 0    | 0    | 538                  | 0    | 0    | 561  | 203  |
| Parking (#/hr)                    |      |      |       | 0    | 0    | 0    | 0    | 0                    | 0    | 0    | 0    | 0    |
| Turn Type                         |      |      |       | Perm |      |      | Perm |                      |      | Perm |      | Perm |
| Protected Phases                  |      |      |       |      | 6    |      |      | 8                    |      |      | 4    |      |
| Permitted Phases                  |      |      |       | 6    |      |      | 8    |                      |      | 4    |      | 4    |
| Actuated Green, G (s)             |      |      |       |      | 22.0 |      |      | 42.0                 |      |      | 42.0 | 42.0 |
| Effective Green, g (s)            |      |      |       |      | 21.0 |      |      | 41.0                 |      |      | 41.0 | 41.0 |
| Actuated g/C Ratio                |      |      |       |      | 0.30 |      |      | 0.59                 |      |      | 0.59 | 0.59 |
| Clearance Time (s)                |      |      |       |      | 3.0  |      |      | 3.0                  |      |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)                |      |      |       |      | 491  |      |      | 888                  |      |      | 966  | 835  |
| v/s Ratio Prot                    |      |      |       |      |      |      |      |                      |      |      |      |      |
| v/s Ratio Perm                    |      |      |       |      | 0.07 |      |      | 0.36                 |      |      | 0.34 | 0.14 |
| v/c Ratio                         |      |      |       |      | 0.22 |      |      | 0.61                 |      |      | 0.58 | 0.24 |
| Uniform Delay, d <sub>1</sub>     |      |      |       |      | 18.3 |      |      | 9.3                  |      |      | 9.1  | 7.0  |
| Progression Factor                |      |      |       |      | 1.00 |      |      | 0.23                 |      |      | 0.76 | 1.43 |
| Incremental Delay, d <sub>2</sub> |      |      |       |      | 1.0  |      |      | 2.0                  |      |      | 2.2  | 0.6  |
| Delay (s)                         |      |      |       |      | 19.4 |      |      | 4.1                  |      |      | 9.2  | 10.6 |
| Level of Service                  |      |      |       |      | B    |      |      | A                    |      |      | A    | B    |
| Approach Delay (s)                |      | 0.0  |       |      | 19.4 |      |      | 4.1                  |      |      | 9.7  |      |
| Approach LOS                      |      | A    |       |      | B    |      |      | A                    |      |      | A    |      |
| <b>Intersection Summary</b>       |      |      |       |      |      |      |      |                      |      |      |      |      |
| HCM Average Control Delay         |      |      | 8.5   |      |      |      |      | HCM Level of Service |      |      | A    |      |
| HCM Volume to Capacity ratio      |      |      | 0.47  |      |      |      |      |                      |      |      |      |      |
| Actuated Cycle Length (s)         |      |      | 70.0  |      |      |      |      | Sum of lost time (s) |      |      | 8.0  |      |
| Intersection Capacity Utilization |      |      | 75.6% |      |      |      |      | ICU Level of Service |      |      | D    |      |
| Analysis Period (min)             |      |      | 15    |      |      |      |      |                      |      |      |      |      |
| c Critical Lane Group             |      |      |       |      |      |      |      |                      |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
 3426: L Street & 19th Street

7/11/2005



| Movement                          | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations               |      |      |      |      | ↑↑   |      |      |      |      |      | ↑↑↑   |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)               |      |      |      |      | 4.0  |      |      |      |      |      | 4.0   |      |
| Lane Util. Factor                 |      |      |      |      | 0.95 |      |      |      |      |      | 0.91  |      |
| Fr <sub>t</sub>                   |      |      |      |      | 1.00 |      |      |      |      |      | 0.98  |      |
| Fl <sub>t</sub> Protected         |      |      |      |      | 0.99 |      |      |      |      |      | 1.00  |      |
| Satd. Flow (prot)                 |      |      |      |      | 3345 |      |      |      |      |      | 4831  |      |
| Fl <sub>t</sub> Permitted         |      |      |      |      | 0.99 |      |      |      |      |      | 1.00  |      |
| Satd. Flow (perm)                 |      |      |      |      | 3345 |      |      |      |      |      | 4831  |      |
| Volume (vph)                      | 0    | 0    | 0    | 79   | 706  | 0    | 0    | 0    | 0    | 0    | 376   | 49   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0    | 79   | 706  | 0    | 0    | 0    | 0    | 0    | 376   | 49   |
| RTOR Reduction (vph)              | 0    | 0    | 0    | 0    | 17   | 0    | 0    | 0    | 0    | 0    | 30    | 0    |
| Lane Group Flow (vph)             | 0    | 0    | 0    | 0    | 768  | 0    | 0    | 0    | 0    | 0    | 395   | 0    |
| Parking (#/hr)                    |      | 0    | 0    | 0    | 0    |      |      |      |      | 0    | 0     | 0    |
| Turn Type                         |      |      |      |      | Perm |      |      |      |      |      |       |      |
| Protected Phases                  |      |      |      |      |      | 6    |      |      |      |      |       | 4    |
| Permitted Phases                  |      |      |      |      | 6    |      |      |      |      |      |       |      |
| Actuated Green, G (s)             |      |      |      |      | 24.0 |      |      |      |      |      | 20.0  |      |
| Effective Green, g (s)            |      |      |      |      | 23.0 |      |      |      |      |      | 19.0  |      |
| Actuated g/C Ratio                |      |      |      |      | 0.46 |      |      |      |      |      | 0.38  |      |
| Clearance Time (s)                |      |      |      |      | 3.0  |      |      |      |      |      | 3.0   |      |
| Lane Grp Cap (vph)                |      |      |      |      | 1539 |      |      |      |      |      | 1836  |      |
| v/s Ratio Prot                    |      |      |      |      |      |      |      |      |      |      | c0.08 |      |
| v/s Ratio Perm                    |      |      |      |      | 0.23 |      |      |      |      |      |       |      |
| v/c Ratio                         |      |      |      |      | 0.50 |      |      |      |      |      | 0.21  |      |
| Uniform Delay, d <sub>1</sub>     |      |      |      |      | 9.5  |      |      |      |      |      | 10.5  |      |
| Progression Factor                |      |      |      |      | 0.45 |      |      |      |      |      | 0.75  |      |
| Incremental Delay, d <sub>2</sub> |      |      |      |      | 1.0  |      |      |      |      |      | 0.3   |      |
| Delay (s)                         |      |      |      |      | 5.3  |      |      |      |      |      | 8.1   |      |
| Level of Service                  |      |      |      |      | A    |      |      |      |      |      | A     |      |
| Approach Delay (s)                |      | 0.0  |      |      | 5.3  |      |      | 0.0  |      |      | 8.1   |      |
| Approach LOS                      |      | A    |      |      | A    |      |      | A    |      |      | A     |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 6.3   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.37  |                      |     |
| Actuated Cycle Length (s)         | 50.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 36.8% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3427: L Street & 26th St

7/11/2005



| Movement                          | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations               |      |      |      |      | ↕↕   |      |      | ↕    |      |      | ↕    |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      |      |      |      | 4.0  |      |      | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor                 |      |      |      |      | 0.95 |      |      | 1.00 |      |      | 1.00 |      |
| Fr <sub>t</sub>                   |      |      |      |      | 0.99 |      |      | 1.00 |      |      | 0.94 |      |
| Fl <sub>t</sub> Protected         |      |      |      |      | 1.00 |      |      | 0.98 |      |      | 1.00 |      |
| Satd. Flow (prot)                 |      |      |      |      | 3335 |      |      | 1649 |      |      | 1579 |      |
| Fl <sub>t</sub> Permitted         |      |      |      |      | 1.00 |      |      | 0.93 |      |      | 1.00 |      |
| Satd. Flow (perm)                 |      |      |      |      | 3335 |      |      | 1567 |      |      | 1579 |      |
| Volume (vph)                      | 0    | 0    | 0    | 14   | 726  | 37   | 18   | 37   | 0    | 0    | 42   | 32   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0    | 14   | 726  | 37   | 18   | 37   | 0    | 0    | 42   | 32   |
| RTOR Reduction (vph)              | 0    | 0    | 0    | 0    | 7    | 0    | 0    | 0    | 0    | 0    | 20   | 0    |
| Lane Group Flow (vph)             | 0    | 0    | 0    | 0    | 770  | 0    | 0    | 55   | 0    | 0    | 54   | 0    |
| Parking (#/hr)                    |      |      |      | 0    | 0    | 0    | 0    | 0    |      |      | 0    | 0    |
| Turn Type                         |      |      |      | Perm |      |      | Perm |      |      |      |      |      |
| Protected Phases                  |      |      |      |      | 8    |      |      | 2    |      |      | 6    |      |
| Permitted Phases                  |      |      |      | 8    |      |      | 2    |      |      |      |      |      |
| Actuated Green, G (s)             |      |      |      |      | 24.0 |      |      | 20.0 |      |      | 20.0 |      |
| Effective Green, g (s)            |      |      |      |      | 23.0 |      |      | 19.0 |      |      | 19.0 |      |
| Actuated g/C Ratio                |      |      |      |      | 0.46 |      |      | 0.38 |      |      | 0.38 |      |
| Clearance Time (s)                |      |      |      |      | 3.0  |      |      | 3.0  |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |      |      |      |      | 1534 |      |      | 595  |      |      | 600  |      |
| v/s Ratio Prot                    |      |      |      |      |      |      |      |      |      |      | 0.03 |      |
| v/s Ratio Perm                    |      |      |      |      | 0.23 |      |      | 0.04 |      |      |      |      |
| v/c Ratio                         |      |      |      |      | 0.50 |      |      | 0.09 |      |      | 0.09 |      |
| Uniform Delay, d <sub>1</sub>     |      |      |      |      | 9.5  |      |      | 10.0 |      |      | 10.0 |      |
| Progression Factor                |      |      |      |      | 1.00 |      |      | 0.74 |      |      | 1.00 |      |
| Incremental Delay, d <sub>2</sub> |      |      |      |      | 1.2  |      |      | 0.3  |      |      | 0.3  |      |
| Delay (s)                         |      |      |      |      | 10.7 |      |      | 7.7  |      |      | 10.2 |      |
| Level of Service                  |      |      |      |      | B    |      |      | A    |      |      | B    |      |
| Approach Delay (s)                |      | 0.0  |      |      | 10.7 |      |      | 7.7  |      |      | 10.2 |      |
| Approach LOS                      |      | A    |      |      | B    |      |      | A    |      |      | B    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.4  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.32  |                      |     |
| Actuated Cycle Length (s)         | 50.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 37.9% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3428: J Street & 29th St off ramp

7/11/2005



| Movement                          | EBT   | EBR  | SBL   | SBT   | SWL2 | SWL  |
|-----------------------------------|-------|------|-------|-------|------|------|
| Lane Configurations               | ↑↑↑   |      |       | ↑↑↑   |      | ↘↘   |
| Ideal Flow (vphpl)                | 1900  | 1900 | 1900  | 1900  | 1900 | 1900 |
| Total Lost time (s)               | 4.0   |      |       | 4.0   |      | 4.0  |
| Lane Util. Factor                 | 0.91  |      |       | 0.91  |      | 0.97 |
| Fr <sub>t</sub>                   | 0.96  |      |       | 1.00  |      | 1.00 |
| Fl <sub>t</sub> Protected         | 1.00  |      |       | 1.00  |      | 0.95 |
| Satd. Flow (prot)                 | 4733  |      |       | 4893  |      | 3433 |
| Fl <sub>t</sub> Permitted         | 1.00  |      |       | 1.00  |      | 0.95 |
| Satd. Flow (perm)                 | 4733  |      |       | 4893  |      | 3433 |
| Volume (vph)                      | 698   | 230  | 34    | 327   | 389  | 601  |
| Peak-hour factor, PHF             | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 698   | 230  | 34    | 327   | 389  | 601  |
| RTOR Reduction (vph)              | 85    | 0    | 0     | 0     | 0    | 166  |
| Lane Group Flow (vph)             | 843   | 0    | 0     | 361   | 0    | 824  |
| Parking (#/hr)                    | 0     | 0    |       | 0     |      |      |
| Turn Type                         |       |      | Split |       | Perm |      |
| Protected Phases                  | 2     |      | 8     | 8     |      | 4    |
| Permitted Phases                  |       |      |       |       | 4    |      |
| Actuated Green, G (s)             | 19.0  |      |       | 17.0  |      | 25.0 |
| Effective Green, g (s)            | 18.0  |      |       | 16.0  |      | 24.0 |
| Actuated g/C Ratio                | 0.26  |      |       | 0.23  |      | 0.34 |
| Clearance Time (s)                | 3.0   |      |       | 3.0   |      | 3.0  |
| Lane Grp Cap (vph)                | 1217  |      |       | 1118  |      | 1177 |
| v/s Ratio Prot                    | c0.18 |      |       | c0.07 |      |      |
| v/s Ratio Perm                    |       |      |       |       |      | 0.24 |
| v/c Ratio                         | 0.69  |      |       | 0.32  |      | 0.70 |
| Uniform Delay, d <sub>1</sub>     | 23.5  |      |       | 22.5  |      | 19.9 |
| Progression Factor                | 0.51  |      |       | 1.00  |      | 1.00 |
| Incremental Delay, d <sub>2</sub> | 3.1   |      |       | 0.8   |      | 3.5  |
| Delay (s)                         | 15.0  |      |       | 23.3  |      | 23.4 |
| Level of Service                  | B     |      |       | C     |      | C    |
| Approach Delay (s)                | 15.0  |      |       | 23.3  |      | 23.4 |
| Approach LOS                      | B     |      |       | C     |      | C    |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 19.9  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.59  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 63.9% | ICU Level of Service | B    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3429: J Street & Alhambra

7/11/2005



| Movement               | EBL   | EBT   | EBR  | WBL   | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|-------|-------|------|-------|------|------|------|------|------|------|-------|------|
| Lane Configurations    | ↖     | ↕     |      | ↖     | ↕    | ↗    |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0   | 4.0   |      | 4.0   | 4.0  | 4.0  |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor      | 1.00  | 0.95  |      | 0.95  | 0.95 | 1.00 |      | 0.95 |      |      | 0.95  |      |
| Frt                    | 1.00  | 0.96  |      | 1.00  | 1.00 | 0.85 |      | 0.95 |      |      | 1.00  |      |
| Flt Protected          | 0.95  | 1.00  |      | 0.95  | 0.95 | 1.00 |      | 1.00 |      |      | 0.99  |      |
| Satd. Flow (prot)      | 1770  | 3216  |      | 1681  | 1681 | 1425 |      | 3201 |      |      | 3335  |      |
| Flt Permitted          | 0.95  | 1.00  |      | 0.95  | 0.95 | 1.00 |      | 1.00 |      |      | 0.83  |      |
| Satd. Flow (perm)      | 1770  | 3216  |      | 1681  | 1681 | 1425 |      | 3201 |      |      | 2790  |      |
| Volume (vph)           | 152   | 559   | 229  | 534   | 0    | 139  | 0    | 243  | 114  | 64   | 323   | 0    |
| Peak-hour factor, PHF  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 152   | 559   | 229  | 534   | 0    | 139  | 0    | 243  | 114  | 64   | 323   | 0    |
| RTOR Reduction (vph)   | 0     | 63    | 0    | 0     | 0    | 101  | 0    | 79   | 0    | 0    | 0     | 0    |
| Lane Group Flow (vph)  | 152   | 725   | 0    | 267   | 267  | 38   | 0    | 278  | 0    | 0    | 387   | 0    |
| Parking (#/hr)         |       | 0     | 0    |       |      | 0    |      | 0    | 0    |      | 0     |      |
| Turn Type              | Split |       |      | Split |      | Perm |      |      |      | Perm |       |      |
| Protected Phases       | 2     | 2     |      | 6     | 6    |      |      | 8    |      |      | 4     |      |
| Permitted Phases       |       |       |      |       |      | 6    |      |      |      | 4    |       |      |
| Actuated Green, G (s)  | 24.0  | 24.0  |      | 20.0  | 20.0 | 20.0 |      | 17.0 |      |      | 17.0  |      |
| Effective Green, g (s) | 23.0  | 23.0  |      | 19.0  | 19.0 | 19.0 |      | 16.0 |      |      | 16.0  |      |
| Actuated g/C Ratio     | 0.33  | 0.33  |      | 0.27  | 0.27 | 0.27 |      | 0.23 |      |      | 0.23  |      |
| Clearance Time (s)     | 3.0   | 3.0   |      | 3.0   | 3.0  | 3.0  |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)     | 582   | 1057  |      | 456   | 456  | 387  |      | 732  |      |      | 638   |      |
| v/s Ratio Prot         | 0.09  | c0.23 |      | c0.16 | 0.16 |      |      | 0.09 |      |      |       |      |
| v/s Ratio Perm         |       |       |      |       |      | 0.03 |      |      |      |      | c0.14 |      |
| v/c Ratio              | 0.26  | 0.69  |      | 0.59  | 0.59 | 0.10 |      | 0.38 |      |      | 0.61  |      |
| Uniform Delay, d1      | 17.3  | 20.4  |      | 22.1  | 22.1 | 19.1 |      | 22.8 |      |      | 24.2  |      |
| Progression Factor     | 0.58  | 0.56  |      | 1.00  | 1.00 | 1.00 |      | 0.54 |      |      | 1.00  |      |
| Incremental Delay, d2  | 1.0   | 3.4   |      | 5.4   | 5.4  | 0.5  |      | 1.4  |      |      | 4.2   |      |
| Delay (s)              | 11.1  | 14.9  |      | 27.5  | 27.5 | 19.6 |      | 13.7 |      |      | 28.4  |      |
| Level of Service       | B     | B     |      | C     | C    | B    |      | B    |      |      | C     |      |
| Approach Delay (s)     |       | 14.3  |      |       | 25.9 |      |      | 13.7 |      |      | 28.4  |      |
| Approach LOS           |       | B     |      |       | C    |      |      | B    |      |      | C     |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 19.8  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.63  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 72.1% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3435: N Street & 29th Street

7/11/2005



| Movement               | EBT  | EBR   | EBR2 | WBL2  | WBL   | WBT   | SBL2 | SBL   | SBT  | SBR  |
|------------------------|------|-------|------|-------|-------|-------|------|-------|------|------|
| Lane Configurations    | ↑    | ↗     |      |       | ↖     | ↖     |      | ↗     | ↑    | ↗    |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900  | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    | 4.0  | 4.0   |      |       | 4.0   | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor      | 1.00 | 1.00  |      |       | 0.95  | 0.95  |      | 0.97  | 0.95 |      |
| Frt                    | 1.00 | 0.85  |      |       | 1.00  | 1.00  |      | 1.00  | 1.00 |      |
| Flt Protected          | 1.00 | 1.00  |      |       | 0.95  | 0.98  |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)      | 1676 | 1425  |      |       | 1681  | 1728  |      | 3433  | 3346 |      |
| Flt Permitted          | 1.00 | 1.00  |      |       | 0.95  | 0.98  |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)      | 1676 | 1425  |      |       | 1681  | 1728  |      | 3433  | 3346 |      |
| Volume (vph)           | 181  | 156   | 29   | 155   | 105   | 95    | 26   | 537   | 295  | 10   |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 181  | 156   | 29   | 155   | 105   | 95    | 26   | 537   | 295  | 10   |
| RTOR Reduction (vph)   | 0    | 9     | 0    | 0     | 0     | 0     | 0    | 0     | 4    | 0    |
| Lane Group Flow (vph)  | 181  | 176   | 0    | 0     | 173   | 182   | 0    | 563   | 301  | 0    |
| Parking (#/hr)         | 0    | 0     | 0    |       |       |       |      |       | 0    |      |
| Turn Type              |      | Perm  |      | Split | Split |       | Perm | Perm  |      |      |
| Protected Phases       | 4    |       |      | 8     | 8     | 8     |      |       | 6    |      |
| Permitted Phases       |      | 4     |      |       |       |       | 6    | 6     |      |      |
| Actuated Green, G (s)  | 21.0 | 21.0  |      |       | 19.0  | 19.0  |      | 21.0  | 21.0 |      |
| Effective Green, g (s) | 20.0 | 20.0  |      |       | 18.0  | 18.0  |      | 20.0  | 20.0 |      |
| Actuated g/C Ratio     | 0.29 | 0.29  |      |       | 0.26  | 0.26  |      | 0.29  | 0.29 |      |
| Clearance Time (s)     | 3.0  | 3.0   |      |       | 3.0   | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     | 479  | 407   |      |       | 432   | 444   |      | 981   | 956  |      |
| v/s Ratio Prot         | 0.11 |       |      |       | 0.10  | c0.11 |      |       | 0.09 |      |
| v/s Ratio Perm         |      | c0.12 |      |       |       |       |      | c0.16 |      |      |
| v/c Ratio              | 0.38 | 0.43  |      |       | 0.40  | 0.41  |      | 0.57  | 0.32 |      |
| Uniform Delay, d1      | 20.0 | 20.4  |      |       | 21.5  | 21.6  |      | 21.4  | 19.6 |      |
| Progression Factor     | 0.58 | 0.55  |      |       | 0.45  | 0.85  |      | 1.07  | 1.06 |      |
| Incremental Delay, d2  | 2.2  | 3.3   |      |       | 2.3   | 1.9   |      | 2.3   | 0.8  |      |
| Delay (s)              | 13.8 | 14.5  |      |       | 12.0  | 20.2  |      | 25.2  | 21.6 |      |
| Level of Service       | B    | B     |      |       | B     | C     |      | C     | C    |      |
| Approach Delay (s)     | 14.1 |       |      |       |       | 16.2  |      |       | 23.9 |      |
| Approach LOS           | B    |       |      |       |       | B     |      |       | C    |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 20.0  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.47  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 47.2% | ICU Level of Service | A    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3436: Capitol & Alhambra

7/11/2005



| Movement                  | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|---------------------------|-------|-------|------|-------|-------|------|------|-------|------|------|------|------|
| Lane Configurations       |       | ↔     |      |       | ↔     |      | ↖    | ↑     | ↗    | ↖    | ↑    | ↗    |
| Ideal Flow (vphpl)        | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |       | 4.0   |      |       | 4.0   |      | 4.0  | 4.0   | 4.0  | 4.0  | 4.0  | 4.0  |
| Lane Util. Factor         |       | 0.95  |      |       | 0.95  |      | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Fr <sub>t</sub>           |       | 0.98  |      |       | 0.98  |      | 1.00 | 1.00  | 0.85 | 1.00 | 1.00 | 0.85 |
| Fl <sub>t</sub> Protected |       | 0.99  |      |       | 1.00  |      | 0.95 | 1.00  | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot)         |       | 3264  |      |       | 3285  |      | 1593 | 1676  | 1425 | 1593 | 1676 | 1425 |
| Fl <sub>t</sub> Permitted |       | 0.99  |      |       | 1.00  |      | 0.36 | 1.00  | 1.00 | 0.28 | 1.00 | 1.00 |
| Satd. Flow (perm)         |       | 3264  |      |       | 3285  |      | 600  | 1676  | 1425 | 470  | 1676 | 1425 |
| Volume (vph)              | 39    | 231   | 50   | 29    | 551   | 93   | 48   | 451   | 104  | 94   | 385  | 52   |
| Peak-hour factor, PHF     | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 39    | 231   | 50   | 29    | 551   | 93   | 48   | 451   | 104  | 94   | 385  | 52   |
| RTOR Reduction (vph)      | 0     | 22    | 0    | 0     | 18    | 0    | 0    | 0     | 59   | 0    | 0    | 33   |
| Lane Group Flow (vph)     | 0     | 298   | 0    | 0     | 655   | 0    | 48   | 451   | 45   | 94   | 385  | 19   |
| Parking (#/hr)            | 0     | 0     | 0    | 0     | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type                 | Split |       |      | Split |       |      | Perm |       | Perm | Perm |      | Perm |
| Protected Phases          | 4     | 4     |      | 8     | 8     |      |      | 2     |      |      |      | 6    |
| Permitted Phases          |       |       |      |       |       |      | 2    |       | 2    | 6    |      | 6    |
| Actuated Green, G (s)     |       | 17.0  |      |       | 18.0  |      | 26.0 | 26.0  | 26.0 | 26.0 | 26.0 | 26.0 |
| Effective Green, g (s)    |       | 16.0  |      |       | 17.0  |      | 25.0 | 25.0  | 25.0 | 25.0 | 25.0 | 25.0 |
| Actuated g/C Ratio        |       | 0.23  |      |       | 0.24  |      | 0.36 | 0.36  | 0.36 | 0.36 | 0.36 | 0.36 |
| Clearance Time (s)        |       | 3.0   |      |       | 3.0   |      | 3.0  | 3.0   | 3.0  | 3.0  | 3.0  | 3.0  |
| Lane Grp Cap (vph)        |       | 746   |      |       | 798   |      | 214  | 599   | 509  | 168  | 599  | 509  |
| v/s Ratio Prot            |       | c0.09 |      |       | c0.20 |      |      | c0.27 |      |      | 0.23 |      |
| v/s Ratio Perm            |       |       |      |       |       |      | 0.08 |       | 0.03 | 0.20 |      | 0.01 |
| v/c Ratio                 |       | 0.40  |      |       | 0.82  |      | 0.22 | 0.75  | 0.09 | 0.56 | 0.64 | 0.04 |
| Uniform Delay, d1         |       | 22.9  |      |       | 25.1  |      | 15.7 | 19.8  | 14.9 | 18.1 | 18.8 | 14.7 |
| Progression Factor        |       | 1.12  |      |       | 1.00  |      | 1.07 | 0.97  | 1.33 | 1.02 | 1.03 | 1.75 |
| Incremental Delay, d2     |       | 1.5   |      |       | 9.3   |      | 1.7  | 6.0   | 0.2  | 11.0 | 4.5  | 0.1  |
| Delay (s)                 |       | 27.2  |      |       | 34.3  |      | 18.4 | 25.2  | 20.1 | 29.5 | 23.8 | 25.7 |
| Level of Service          |       | C     |      |       | C     |      | B    | C     | C    | C    | C    | C    |
| Approach Delay (s)        |       | 27.2  |      |       | 34.3  |      |      | 23.8  |      |      | 25.0 |      |
| Approach LOS              |       | C     |      |       | C     |      |      | C     |      |      | C    |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 28.0  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.68  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 70.4% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3437: P Street & 29th St off ramp

7/11/2005



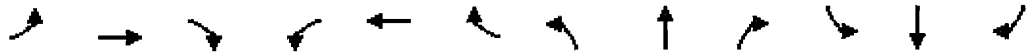
| Movement               | WBL  | WBT   | SBT   | SBR  | SWL   | SWR  |
|------------------------|------|-------|-------|------|-------|------|
| Lane Configurations    | ↙    | ↑↑    | ↑↑↔   |      | ↘↘    | ↗    |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900  | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0  | 4.0   | 4.0   |      | 4.0   | 4.0  |
| Lane Util. Factor      | 1.00 | 0.95  | 0.91  |      | 0.97  | 0.91 |
| Frt                    | 1.00 | 1.00  | 0.96  |      | 0.98  | 0.85 |
| Flt Protected          | 0.95 | 1.00  | 1.00  |      | 0.96  | 1.00 |
| Satd. Flow (prot)      | 1593 | 3362  | 4716  |      | 3397  | 1441 |
| Flt Permitted          | 0.95 | 1.00  | 1.00  |      | 0.96  | 1.00 |
| Satd. Flow (perm)      | 1593 | 3362  | 4716  |      | 3397  | 1441 |
| Volume (vph)           | 83   | 616   | 297   | 110  | 601   | 376  |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 83   | 616   | 297   | 110  | 601   | 376  |
| RTOR Reduction (vph)   | 62   | 0     | 83    | 0    | 0     | 0    |
| Lane Group Flow (vph)  | 21   | 616   | 324   | 0    | 688   | 289  |
| Parking (#/hr)         | 0    | 0     | 0     | 0    |       |      |
| Turn Type              | Perm |       |       |      | Perm  |      |
| Protected Phases       |      | 6     | 7     |      | 8     |      |
| Permitted Phases       | 6    |       |       |      |       | 8    |
| Actuated Green, G (s)  | 19.0 | 19.0  | 18.0  |      | 24.0  | 24.0 |
| Effective Green, g (s) | 18.0 | 18.0  | 17.0  |      | 23.0  | 23.0 |
| Actuated g/C Ratio     | 0.26 | 0.26  | 0.24  |      | 0.33  | 0.33 |
| Clearance Time (s)     | 3.0  | 3.0   | 3.0   |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)     | 410  | 865   | 1145  |      | 1116  | 473  |
| v/s Ratio Prot         |      | c0.18 | c0.07 |      | c0.20 |      |
| v/s Ratio Perm         | 0.01 |       |       |      |       | 0.20 |
| v/c Ratio              | 0.05 | 0.71  | 0.28  |      | 0.62  | 0.61 |
| Uniform Delay, d1      | 19.6 | 23.6  | 21.5  |      | 19.8  | 19.7 |
| Progression Factor     | 0.29 | 0.56  | 0.19  |      | 1.00  | 1.00 |
| Incremental Delay, d2  | 0.2  | 4.6   | 0.6   |      | 2.6   | 5.8  |
| Delay (s)              | 5.9  | 17.8  | 4.7   |      | 22.3  | 25.5 |
| Level of Service       | A    | B     | A     |      | C     | C    |
| Approach Delay (s)     |      | 16.4  | 4.7   |      | 23.3  |      |
| Approach LOS           |      | B     | A     |      | C     |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 17.3  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.55  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 56.3% | ICU Level of Service | B    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |



HCM Signalized Intersection Capacity Analysis  
 3438: P Street & Alhambra

7/11/2005



| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL   | SBT  | SBR  |
|---------------------------|------|------|------|------|------|------|------|-------|------|-------|------|------|
| Lane Configurations       |      |      |      |      | ↑↑↑  |      | ↖    | ↗     |      | ↖     | ↗    |      |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)       |      |      |      |      | 4.0  |      | 4.0  | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor         |      |      |      |      | 0.91 |      | 1.00 | 1.00  |      | 1.00  | 1.00 |      |
| Fr <sub>t</sub>           |      |      |      |      | 0.96 |      | 1.00 | 0.94  |      | 1.00  | 0.96 |      |
| Fl <sub>t</sub> Protected |      |      |      |      | 1.00 |      | 0.95 | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)         |      |      |      |      | 4888 |      | 1770 | 1760  |      | 1770  | 1792 |      |
| Fl <sub>t</sub> Permitted |      |      |      |      | 1.00 |      | 0.95 | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)         |      |      |      |      | 4888 |      | 1770 | 1760  |      | 1770  | 1792 |      |
| Volume (vph)              | 0    | 0    | 0    | 75   | 673  | 229  | 103  | 347   | 203  | 192   | 256  | 86   |
| Peak-hour factor, PHF     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)           | 0    | 0    | 0    | 75   | 673  | 229  | 103  | 347   | 203  | 192   | 256  | 86   |
| RTOR Reduction (vph)      | 0    | 0    | 0    | 0    | 79   | 0    | 0    | 30    | 0    | 0     | 17   | 0    |
| Lane Group Flow (vph)     | 0    | 0    | 0    | 0    | 898  | 0    | 103  | 520   | 0    | 192   | 325  | 0    |
| Turn Type                 |      |      |      | Perm |      |      | Prot |       |      | Prot  |      |      |
| Protected Phases          |      |      |      |      | 6    |      | 3    | 8     |      | 7     | 4    |      |
| Permitted Phases          |      |      |      | 6    |      |      |      |       |      |       |      |      |
| Actuated Green, G (s)     |      |      |      |      | 18.0 |      | 10.0 | 30.0  |      | 13.0  | 33.0 |      |
| Effective Green, g (s)    |      |      |      |      | 17.0 |      | 9.0  | 29.0  |      | 12.0  | 32.0 |      |
| Actuated g/C Ratio        |      |      |      |      | 0.24 |      | 0.13 | 0.41  |      | 0.17  | 0.46 |      |
| Clearance Time (s)        |      |      |      |      | 3.0  |      | 3.0  | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)        |      |      |      |      | 1187 |      | 228  | 729   |      | 303   | 819  |      |
| v/s Ratio Prot            |      |      |      |      |      |      | 0.06 | c0.30 |      | c0.11 | 0.18 |      |
| v/s Ratio Perm            |      |      |      |      | 0.18 |      |      |       |      |       |      |      |
| v/c Ratio                 |      |      |      |      | 0.76 |      | 0.45 | 0.71  |      | 0.63  | 0.40 |      |
| Uniform Delay, d1         |      |      |      |      | 24.6 |      | 28.2 | 17.0  |      | 27.0  | 12.6 |      |
| Progression Factor        |      |      |      |      | 1.00 |      | 1.00 | 1.00  |      | 0.90  | 0.94 |      |
| Incremental Delay, d2     |      |      |      |      | 4.5  |      | 6.3  | 5.9   |      | 8.0   | 1.2  |      |
| Delay (s)                 |      |      |      |      | 29.1 |      | 34.6 | 22.9  |      | 32.2  | 13.1 |      |
| Level of Service          |      |      |      |      | C    |      | C    | C     |      | C     | B    |      |
| Approach Delay (s)        |      | 0.0  |      |      | 29.1 |      |      | 24.8  |      |       | 19.9 |      |
| Approach LOS              |      | A    |      |      | C    |      |      | C     |      |       | B    |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 25.5  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.71  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 70.9% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 3444: Q Street & 29th Street

7/11/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|-------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑↑    |      |      |      |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      |      |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 0.95  |      |      |      |      |      |      |      |      | 0.91 |      |
| Frt                    |      | 0.97  |      |      |      |      |      |      |      |      | 1.00 |      |
| Flt Protected          |      | 1.00  |      |      |      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (prot)      |      | 3450  |      |      |      |      |      |      |      |      | 5022 |      |
| Flt Permitted          |      | 1.00  |      |      |      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (perm)      |      | 3450  |      |      |      |      |      |      |      |      | 5022 |      |
| Volume (vph)           | 0    | 352   | 71   | 0    | 0    | 0    | 0    | 0    | 0    | 252  | 741  | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 352   | 71   | 0    | 0    | 0    | 0    | 0    | 0    | 252  | 741  | 0    |
| RTOR Reduction (vph)   | 0    | 24    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 87   | 0    |
| Lane Group Flow (vph)  | 0    | 399   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 906  | 0    |
| Turn Type              |      |       |      |      |      |      |      |      |      | Perm |      |      |
| Protected Phases       |      | 2     |      |      |      |      |      |      |      |      | 4    |      |
| Permitted Phases       |      |       |      |      |      |      |      |      |      | 4    |      |      |
| Actuated Green, G (s)  |      | 31.0  |      |      |      |      |      |      |      |      | 33.0 |      |
| Effective Green, g (s) |      | 30.0  |      |      |      |      |      |      |      |      | 32.0 |      |
| Actuated g/C Ratio     |      | 0.43  |      |      |      |      |      |      |      |      | 0.46 |      |
| Clearance Time (s)     |      | 3.0   |      |      |      |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 1479  |      |      |      |      |      |      |      |      | 2296 |      |
| v/s Ratio Prot         |      | c0.12 |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |       |      |      |      |      |      |      |      |      | 0.18 |      |
| v/c Ratio              |      | 0.27  |      |      |      |      |      |      |      |      | 0.39 |      |
| Uniform Delay, d1      |      | 12.9  |      |      |      |      |      |      |      |      | 12.6 |      |
| Progression Factor     |      | 1.00  |      |      |      |      |      |      |      |      | 0.20 |      |
| Incremental Delay, d2  |      | 0.4   |      |      |      |      |      |      |      |      | 0.5  |      |
| Delay (s)              |      | 13.4  |      |      |      |      |      |      |      |      | 2.9  |      |
| Level of Service       |      | B     |      |      |      |      |      |      |      |      | A    |      |
| Approach Delay (s)     |      | 13.4  |      |      | 0.0  |      |      | 0.0  |      |      | 2.9  |      |
| Approach LOS           |      | B     |      |      | A    |      |      | A    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 6.0   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.33  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 38.1% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 3467: N Street & Alhambra

7/11/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|-------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations    |      | ↕     |      |      | ↕    |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      | 4.0  |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00  |      |      | 1.00 |      |      | 1.00  |      |      | 1.00 |      |
| Frt                    |      | 0.96  |      |      | 0.99 |      |      | 0.99  |      |      | 0.99 |      |
| Flt Protected          |      | 0.98  |      |      | 0.99 |      |      | 1.00  |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 1586  |      |      | 1634 |      |      | 1648  |      |      | 1662 |      |
| Flt Permitted          |      | 0.80  |      |      | 0.88 |      |      | 0.97  |      |      | 0.99 |      |
| Satd. Flow (perm)      |      | 1292  |      |      | 1451 |      |      | 1602  |      |      | 1640 |      |
| Volume (vph)           | 130  | 150   | 112  | 58   | 186  | 30   | 28   | 478   | 61   | 12   | 411  | 24   |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 130  | 150   | 112  | 58   | 186  | 30   | 28   | 478   | 61   | 12   | 411  | 24   |
| RTOR Reduction (vph)   | 0    | 20    | 0    | 0    | 7    | 0    | 0    | 6     | 0    | 0    | 3    | 0    |
| Lane Group Flow (vph)  | 0    | 372   | 0    | 0    | 267  | 0    | 0    | 561   | 0    | 0    | 444  | 0    |
| Parking (#/hr)         | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |       |      | Perm |      |      | Perm |       |      | Perm |      |      |
| Protected Phases       |      | 4     |      |      | 8    |      |      | 2     |      |      | 6    |      |
| Permitted Phases       | 4    |       |      | 8    |      |      | 2    |       |      | 6    |      |      |
| Actuated Green, G (s)  |      | 29.0  |      |      | 29.0 |      |      | 35.0  |      |      | 35.0 |      |
| Effective Green, g (s) |      | 28.0  |      |      | 28.0 |      |      | 34.0  |      |      | 34.0 |      |
| Actuated g/C Ratio     |      | 0.40  |      |      | 0.40 |      |      | 0.49  |      |      | 0.49 |      |
| Clearance Time (s)     |      | 3.0   |      |      | 3.0  |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 517   |      |      | 580  |      |      | 778   |      |      | 797  |      |
| v/s Ratio Prot         |      |       |      |      |      |      |      |       |      |      |      |      |
| v/s Ratio Perm         |      | c0.29 |      |      | 0.18 |      |      | c0.35 |      |      | 0.27 |      |
| v/c Ratio              |      | 0.72  |      |      | 0.46 |      |      | 0.72  |      |      | 0.56 |      |
| Uniform Delay, d1      |      | 17.7  |      |      | 15.4 |      |      | 14.2  |      |      | 12.7 |      |
| Progression Factor     |      | 0.60  |      |      | 1.00 |      |      | 0.62  |      |      | 0.30 |      |
| Incremental Delay, d2  |      | 7.8   |      |      | 2.6  |      |      | 3.8   |      |      | 2.2  |      |
| Delay (s)              |      | 18.5  |      |      | 18.1 |      |      | 12.6  |      |      | 6.0  |      |
| Level of Service       |      | B     |      |      | B    |      |      | B     |      |      | A    |      |
| Approach Delay (s)     |      | 18.5  |      |      | 18.1 |      |      | 12.6  |      |      | 6.0  |      |
| Approach LOS           |      | B     |      |      | B    |      |      | B     |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 13.1  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.72  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 84.1% | ICU Level of Service | E   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 5802: K Street & 29th Street

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑    | ↗    | ↖    | ↑     |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  | 4.0  | 4.0   |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00 | 1.00 | 1.00 | 1.00  |      |      |      |      |      | 0.91 |      |
| Frt                    |      | 1.00 | 0.85 | 1.00 | 1.00  |      |      |      |      |      | 0.96 |      |
| Flt Protected          |      | 1.00 | 1.00 | 0.95 | 1.00  |      |      |      |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 1863 | 1583 | 1770 | 1863  |      |      |      |      |      | 4859 |      |
| Flt Permitted          |      | 1.00 | 1.00 | 0.68 | 1.00  |      |      |      |      |      | 1.00 |      |
| Satd. Flow (perm)      |      | 1863 | 1583 | 1268 | 1863  |      |      |      |      |      | 4859 |      |
| Volume (vph)           | 0    | 119  | 96   | 196  | 512   | 0    | 0    | 0    | 0    | 69   | 710  | 298  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 119  | 96   | 196  | 512   | 0    | 0    | 0    | 0    | 69   | 710  | 298  |
| RTOR Reduction (vph)   | 0    | 0    | 42   | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 99   | 0    |
| Lane Group Flow (vph)  | 0    | 119  | 54   | 196  | 512   | 0    | 0    | 0    | 0    | 0    | 978  | 0    |
| Turn Type              |      |      | Perm | Perm |       |      |      |      |      | Perm |      |      |
| Protected Phases       |      | 4    |      |      | 8     |      |      |      |      |      |      | 6    |
| Permitted Phases       |      |      | 4    | 8    |       |      |      |      |      | 6    |      |      |
| Actuated Green, G (s)  |      | 37.0 | 37.0 | 37.0 | 37.0  |      |      |      |      |      | 27.0 |      |
| Effective Green, g (s) |      | 36.0 | 36.0 | 36.0 | 36.0  |      |      |      |      |      | 26.0 |      |
| Actuated g/C Ratio     |      | 0.51 | 0.51 | 0.51 | 0.51  |      |      |      |      |      | 0.37 |      |
| Clearance Time (s)     |      | 3.0  | 3.0  | 3.0  | 3.0   |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 958  | 814  | 652  | 958   |      |      |      |      |      | 1805 |      |
| v/s Ratio Prot         |      | 0.06 |      |      | c0.27 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      | 0.03 | 0.15 |       |      |      |      |      |      | 0.20 |      |
| v/c Ratio              |      | 0.12 | 0.07 | 0.30 | 0.53  |      |      |      |      |      | 0.54 |      |
| Uniform Delay, d1      |      | 8.8  | 8.6  | 9.8  | 11.4  |      |      |      |      |      | 17.3 |      |
| Progression Factor     |      | 0.68 | 1.06 | 0.71 | 0.68  |      |      |      |      |      | 0.68 |      |
| Incremental Delay, d2  |      | 0.3  | 0.2  | 1.1  | 2.0   |      |      |      |      |      | 0.9  |      |
| Delay (s)              |      | 6.3  | 9.2  | 8.1  | 9.7   |      |      |      |      |      | 12.6 |      |
| Level of Service       |      | A    | A    | A    | A     |      |      |      |      |      | B    |      |
| Approach Delay (s)     |      | 7.6  |      |      | 9.2   |      |      | 0.0  |      |      | 12.6 |      |
| Approach LOS           |      | A    |      |      | A     |      |      | A    |      |      | B    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.9  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.54  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 55.4% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 5848: J Street & 30th Street

7/11/2005



| Movement                  | EBL2 | EBL  | EBT   | WBR2 | NBL   | NBT  | NBR  |
|---------------------------|------|------|-------|------|-------|------|------|
| Lane Configurations       |      | ↘    | ↔↕↕   | ↗    | ↘     | ↕↔   |      |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)       |      | 4.0  | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor         |      | 0.86 | 0.86  |      | 0.91  | 0.91 |      |
| Fr <sub>t</sub>           |      | 1.00 | 1.00  |      | 1.00  | 0.95 |      |
| Fl <sub>t</sub> Protected |      | 0.95 | 1.00  |      | 0.95  | 0.99 |      |
| Satd. Flow (prot)         |      | 1522 | 4646  |      | 1610  | 3186 |      |
| Fl <sub>t</sub> Permitted |      | 0.95 | 1.00  |      | 0.95  | 0.99 |      |
| Satd. Flow (perm)         |      | 1522 | 4646  |      | 1610  | 3186 |      |
| Volume (vph)              | 134  | 101  | 817   | 0    | 312   | 219  | 159  |
| Peak-hour factor, PHF     | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)           | 134  | 101  | 817   | 0    | 312   | 219  | 159  |
| RTOR Reduction (vph)      | 0    | 68   | 0     | 0    | 0     | 47   | 0    |
| Lane Group Flow (vph)     | 0    | 167  | 817   | 0    | 227   | 416  | 0    |
| Parking (#/hr)            |      |      | 0     | 0    |       |      | 0    |
| Turn Type                 | Perm | Perm |       | Free | Perm  |      |      |
| Protected Phases          |      |      | 2     |      |       | 8    |      |
| Permitted Phases          | 2    | 2    |       | Free | 8     |      |      |
| Actuated Green, G (s)     |      | 31.0 | 31.0  |      | 33.0  | 33.0 |      |
| Effective Green, g (s)    |      | 30.0 | 30.0  |      | 32.0  | 32.0 |      |
| Actuated g/C Ratio        |      | 0.43 | 0.43  |      | 0.46  | 0.46 |      |
| Clearance Time (s)        |      | 3.0  | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)        |      | 652  | 1991  |      | 736   | 1456 |      |
| v/s Ratio Prot            |      |      | c0.18 |      |       |      |      |
| v/s Ratio Perm            |      | 0.11 |       |      | c0.14 | 0.13 |      |
| v/c Ratio                 |      | 0.26 | 0.41  |      | 0.31  | 0.29 |      |
| Uniform Delay, d1         |      | 12.8 | 13.9  |      | 12.0  | 11.9 |      |
| Progression Factor        |      | 0.65 | 0.73  |      | 0.44  | 0.29 |      |
| Incremental Delay, d2     |      | 0.7  | 0.4   |      | 1.0   | 0.5  |      |
| Delay (s)                 |      | 9.0  | 10.6  |      | 6.3   | 3.9  |      |
| Level of Service          |      | A    | B     |      | A     | A    |      |
| Approach Delay (s)        |      |      | 10.3  |      |       | 4.7  |      |
| Approach LOS              |      |      | B     |      |       | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 8.0   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.36  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 35.9% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 5849: L Street & 30th Street

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR   | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|-------|------|------|------|
| Lane Configurations    |      |      |      |      | ↑↑↑   |      | ↑    | ↑↑↑  |       |      |      |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0   |      | 4.0  | 4.0  |       |      |      |      |
| Lane Util. Factor      |      |      |      |      | 0.91  |      | 0.86 | 0.86 |       |      |      |      |
| Frt                    |      |      |      |      | 0.98  |      | 1.00 | 1.00 |       |      |      |      |
| Flt Protected          |      |      |      |      | 1.00  |      | 0.95 | 1.00 |       |      |      |      |
| Satd. Flow (prot)      |      |      |      |      | 4990  |      | 1522 | 4646 |       |      |      |      |
| Flt Permitted          |      |      |      |      | 1.00  |      | 0.95 | 1.00 |       |      |      |      |
| Satd. Flow (perm)      |      |      |      |      | 4990  |      | 1522 | 4646 |       |      |      |      |
| Volume (vph)           | 0    | 0    | 0    | 0    | 439   | 63   | 288  | 965  | 0     | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 0    | 439   | 63   | 288  | 965  | 0     | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 27    | 0    | 145  | 0    | 0     | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 475   | 0    | 143  | 965  | 0     | 0    | 0    | 0    |
| Parking (#/hr)         |      |      |      |      |       | 0    |      | 0    |       |      |      |      |
| Turn Type              |      |      |      |      |       |      | Perm |      |       |      |      |      |
| Protected Phases       |      |      |      |      | 6     |      |      | 8    |       |      |      |      |
| Permitted Phases       |      |      |      |      |       |      |      | 8    |       |      |      |      |
| Actuated Green, G (s)  |      |      |      |      | 30.0  |      |      | 34.0 | 34.0  |      |      |      |
| Effective Green, g (s) |      |      |      |      | 29.0  |      |      | 33.0 | 33.0  |      |      |      |
| Actuated g/C Ratio     |      |      |      |      | 0.41  |      |      | 0.47 | 0.47  |      |      |      |
| Clearance Time (s)     |      |      |      |      | 3.0   |      |      | 3.0  | 3.0   |      |      |      |
| Lane Grp Cap (vph)     |      |      |      |      | 2067  |      |      | 718  | 2190  |      |      |      |
| v/s Ratio Prot         |      |      |      |      | c0.10 |      |      |      | c0.21 |      |      |      |
| v/s Ratio Perm         |      |      |      |      |       |      |      | 0.09 |       |      |      |      |
| v/c Ratio              |      |      |      |      | 0.23  |      |      | 0.20 | 0.44  |      |      |      |
| Uniform Delay, d1      |      |      |      |      | 13.3  |      |      | 10.8 | 12.3  |      |      |      |
| Progression Factor     |      |      |      |      | 1.09  |      |      | 0.03 | 0.36  |      |      |      |
| Incremental Delay, d2  |      |      |      |      | 0.2   |      |      | 0.4  | 0.5   |      |      |      |
| Delay (s)              |      |      |      |      | 14.8  |      |      | 0.8  | 4.9   |      |      |      |
| Level of Service       |      |      |      |      | B     |      |      | A    | A     |      |      |      |
| Approach Delay (s)     |      | 0.0  |      |      | 14.8  |      |      | 4.0  |       |      | 0.0  |      |
| Approach LOS           |      | A    |      |      | B     |      |      | A    |       |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 7.1   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.34  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 38.2% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 5880: N Street & 30th Street

7/11/2005



| Movement               | EBL  | EBT  | WBT   | WBR  | NBL  | NBT  | NBR   | NEL2 | NEL   | NER  |
|------------------------|------|------|-------|------|------|------|-------|------|-------|------|
| Lane Configurations    |      |      |       |      |      |      |       |      |       |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0  | 4.0  | 4.0   |      |      | 4.0  |       |      | 4.0   |      |
| Lane Util. Factor      | 1.00 | 1.00 | 1.00  |      |      | 0.91 |       |      | 0.97  |      |
| Frt                    | 1.00 | 1.00 | 0.98  |      |      | 0.99 |       |      | 0.99  |      |
| Flt Protected          | 0.95 | 1.00 | 1.00  |      |      | 1.00 |       |      | 0.96  |      |
| Satd. Flow (prot)      | 1770 | 1863 | 1833  |      |      | 5001 |       |      | 3410  |      |
| Flt Permitted          | 0.48 | 1.00 | 1.00  |      |      | 1.00 |       |      | 0.96  |      |
| Satd. Flow (perm)      | 895  | 1863 | 1833  |      |      | 5001 |       |      | 3410  |      |
| Volume (vph)           | 55   | 142  | 196   | 26   | 36   | 322  | 31    | 225  | 940   | 116  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 55   | 142  | 196   | 26   | 36   | 322  | 31    | 225  | 940   | 116  |
| RTOR Reduction (vph)   | 0    | 0    | 7     | 0    | 0    | 14   | 0     | 0    | 0     | 0    |
| Lane Group Flow (vph)  | 55   | 142  | 215   | 0    | 0    | 375  | 0     | 0    | 1281  | 0    |
| Turn Type              | Perm |      |       | Perm |      |      | Split |      |       |      |
| Protected Phases       |      | 4    | 8     |      |      | 2    |       | 6    | 6     |      |
| Permitted Phases       | 4    |      |       |      | 2    |      |       |      |       |      |
| Actuated Green, G (s)  | 17.0 | 17.0 | 17.0  |      |      | 10.0 |       |      | 34.0  |      |
| Effective Green, g (s) | 16.0 | 16.0 | 16.0  |      |      | 9.0  |       |      | 33.0  |      |
| Actuated g/C Ratio     | 0.23 | 0.23 | 0.23  |      |      | 0.13 |       |      | 0.47  |      |
| Clearance Time (s)     | 3.0  | 3.0  | 3.0   |      |      | 3.0  |       |      | 3.0   |      |
| Lane Grp Cap (vph)     | 205  | 426  | 419   |      |      | 643  |       |      | 1608  |      |
| v/s Ratio Prot         |      | 0.08 | c0.12 |      |      |      |       |      | c0.38 |      |
| v/s Ratio Perm         | 0.06 |      |       |      |      | 0.07 |       |      |       |      |
| v/c Ratio              | 0.27 | 0.33 | 0.51  |      |      | 0.58 |       |      | 0.80  |      |
| Uniform Delay, d1      | 22.2 | 22.5 | 23.6  |      |      | 28.7 |       |      | 15.7  |      |
| Progression Factor     | 0.36 | 0.37 | 0.55  |      |      | 0.79 |       |      | 1.00  |      |
| Incremental Delay, d2  | 3.0  | 2.0  | 3.9   |      |      | 3.8  |       |      | 4.2   |      |
| Delay (s)              | 11.0 | 10.3 | 17.0  |      |      | 26.5 |       |      | 19.9  |      |
| Level of Service       | B    | B    | B     |      |      | C    |       |      | B     |      |
| Approach Delay (s)     |      | 10.5 | 17.0  |      |      | 26.5 |       |      | 19.9  |      |
| Approach LOS           |      | B    | B     |      |      | C    |       |      | B     |      |

| Intersection Summary              |  |       |                           |
|-----------------------------------|--|-------|---------------------------|
| HCM Average Control Delay         |  | 19.9  | HCM Level of Service B    |
| HCM Volume to Capacity ratio      |  | 0.69  |                           |
| Actuated Cycle Length (s)         |  | 70.0  | Sum of lost time (s) 12.0 |
| Intersection Capacity Utilization |  | 73.1% | ICU Level of Service D    |
| Analysis Period (min)             |  | 15    |                           |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 5882: P Street & 30th Street

7/11/2005



| Movement               | WBT   | WBR  | NBL2 | NBL   | NBT  |
|------------------------|-------|------|------|-------|------|
| Lane Configurations    | ↑↑↑   |      |      | ↑     | ↑↑↑  |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0   |      |      | 4.0   | 4.0  |
| Lane Util. Factor      | 0.91  |      |      | 1.00  | 0.91 |
| Frt                    | 0.97  |      |      | 1.00  | 1.00 |
| Flt Protected          | 1.00  |      |      | 0.95  | 1.00 |
| Satd. Flow (prot)      | 4947  |      |      | 1593  | 4916 |
| Flt Permitted          | 1.00  |      |      | 0.95  | 1.00 |
| Satd. Flow (perm)      | 4947  |      |      | 1593  | 4916 |
| Volume (vph)           | 577   | 128  | 313  | 81    | 246  |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 577   | 128  | 313  | 81    | 246  |
| RTOR Reduction (vph)   | 0     | 0    | 0    | 76    | 0    |
| Lane Group Flow (vph)  | 705   | 0    | 0    | 318   | 246  |
| Parking (#/hr)         |       | 0    | 0    | 0     | 0    |
| Turn Type              |       |      | Perm | Perm  |      |
| Protected Phases       | 6     |      |      |       | 8    |
| Permitted Phases       |       |      | 8    | 8     |      |
| Actuated Green, G (s)  | 28.0  |      |      | 36.0  | 36.0 |
| Effective Green, g (s) | 27.0  |      |      | 35.0  | 35.0 |
| Actuated g/C Ratio     | 0.39  |      |      | 0.50  | 0.50 |
| Clearance Time (s)     | 3.0   |      |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)     | 1908  |      |      | 797   | 2458 |
| v/s Ratio Prot         | c0.14 |      |      |       | 0.05 |
| v/s Ratio Perm         |       |      |      | c0.20 |      |
| v/c Ratio              | 0.37  |      |      | 0.40  | 0.10 |
| Uniform Delay, d1      | 15.4  |      |      | 10.9  | 9.2  |
| Progression Factor     | 0.39  |      |      | 1.00  | 1.00 |
| Incremental Delay, d2  | 0.4   |      |      | 1.5   | 0.1  |
| Delay (s)              | 6.3   |      |      | 12.4  | 9.3  |
| Level of Service       | A     |      |      | B     | A    |
| Approach Delay (s)     | 6.3   |      |      |       | 11.2 |
| Approach LOS           | A     |      |      |       | B    |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 8.7   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.39  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 42.5% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
5886: Capitol & 30th Street

7/11/2005



| Movement               | EBL   | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|-------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    | ↘     | ↑↑   |      |      | ↑↑    |      |      | ↑↑↑  |      |      |      |      |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0   | 4.0  |      |      | 4.0   |      |      | 4.0  |      |      |      |      |
| Lane Util. Factor      | 1.00  | 0.95 |      |      | 0.95  |      |      | 0.91 |      |      |      |      |
| Frt                    | 1.00  | 1.00 |      |      | 0.96  |      |      | 0.99 |      |      |      |      |
| Flt Protected          | 0.95  | 1.00 |      |      | 1.00  |      |      | 1.00 |      |      |      |      |
| Satd. Flow (prot)      | 1770  | 3539 |      |      | 3388  |      |      | 5001 |      |      |      |      |
| Flt Permitted          | 0.95  | 1.00 |      |      | 1.00  |      |      | 1.00 |      |      |      |      |
| Satd. Flow (perm)      | 1770  | 3539 |      |      | 3388  |      |      | 5001 |      |      |      |      |
| Volume (vph)           | 125   | 234  | 0    | 0    | 472   | 188  | 139  | 1157 | 110  | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 125   | 234  | 0    | 0    | 472   | 188  | 139  | 1157 | 110  | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0     | 0    | 0    | 0    | 61    | 0    | 0    | 14   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 125   | 234  | 0    | 0    | 599   | 0    | 0    | 1392 | 0    | 0    | 0    | 0    |
| Turn Type              | Prot  |      |      |      |       |      | Perm |      |      |      |      |      |
| Protected Phases       | 7     | 4    |      |      | 8     |      |      | 2    |      |      |      |      |
| Permitted Phases       |       |      |      |      |       |      | 2    |      |      |      |      |      |
| Actuated Green, G (s)  | 12.0  | 36.0 |      |      | 21.0  |      |      | 28.0 |      |      |      |      |
| Effective Green, g (s) | 11.0  | 35.0 |      |      | 20.0  |      |      | 27.0 |      |      |      |      |
| Actuated g/C Ratio     | 0.16  | 0.50 |      |      | 0.29  |      |      | 0.39 |      |      |      |      |
| Clearance Time (s)     | 3.0   | 3.0  |      |      | 3.0   |      |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)     | 278   | 1770 |      |      | 968   |      |      | 1929 |      |      |      |      |
| v/s Ratio Prot         | c0.07 | 0.07 |      |      | c0.18 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |       |      |      |      |       |      |      | 0.28 |      |      |      |      |
| v/c Ratio              | 0.45  | 0.13 |      |      | 0.62  |      |      | 0.72 |      |      |      |      |
| Uniform Delay, d1      | 26.8  | 9.4  |      |      | 21.7  |      |      | 18.3 |      |      |      |      |
| Progression Factor     | 0.89  | 0.80 |      |      | 0.16  |      |      | 0.60 |      |      |      |      |
| Incremental Delay, d2  | 5.0   | 0.2  |      |      | 2.1   |      |      | 1.7  |      |      |      |      |
| Delay (s)              | 28.9  | 7.6  |      |      | 5.6   |      |      | 12.6 |      |      |      |      |
| Level of Service       | C     | A    |      |      | A     |      |      | B    |      |      |      |      |
| Approach Delay (s)     |       | 15.0 |      |      | 5.6   |      |      | 12.6 |      |      | 0.0  |      |
| Approach LOS           |       | B    |      |      | A     |      |      | B    |      |      | A    |      |

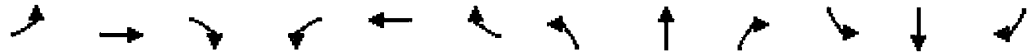
Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 11.1  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.63  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 63.6% | ICU Level of Service | B    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 5888: Capitol & 29th Street

7/11/2005



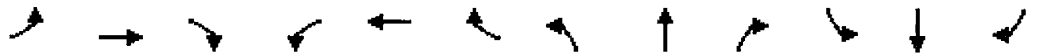
| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑↑   |      | ↘    | ↑↑   |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      | 4.0  | 4.0  |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 0.95 |      | 1.00 | 0.95 |      |      |      |      |      | 0.91 |      |
| Frt                    |      | 0.95 |      | 1.00 | 1.00 |      |      |      |      |      | 0.98 |      |
| Flt Protected          |      | 1.00 |      | 0.95 | 1.00 |      |      |      |      |      | 0.99 |      |
| Satd. Flow (prot)      |      | 3203 |      | 1770 | 3539 |      |      |      |      |      | 4793 |      |
| Flt Permitted          |      | 1.00 |      | 0.56 | 1.00 |      |      |      |      |      | 0.99 |      |
| Satd. Flow (perm)      |      | 3203 |      | 1046 | 3539 |      |      |      |      |      | 4793 |      |
| Volume (vph)           | 0    | 214  | 99   | 162  | 482  | 0    | 0    | 0    | 0    | 147  | 642  | 101  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 214  | 99   | 162  | 482  | 0    | 0    | 0    | 0    | 147  | 642  | 101  |
| RTOR Reduction (vph)   | 0    | 52   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 23   | 0    |
| Lane Group Flow (vph)  | 0    | 261  | 0    | 162  | 482  | 0    | 0    | 0    | 0    | 0    | 867  | 0    |
| Parking (#/hr)         |      | 0    | 0    |      |      |      |      |      |      |      | 0    | 0    |
| Turn Type              |      |      |      | Perm |      |      |      |      |      |      | Perm |      |
| Protected Phases       |      | 4    |      |      | 8    |      |      |      |      |      |      | 6    |
| Permitted Phases       |      |      |      | 8    |      |      |      |      |      | 6    |      |      |
| Actuated Green, G (s)  |      | 34.0 |      | 34.0 | 34.0 |      |      |      |      |      | 30.0 |      |
| Effective Green, g (s) |      | 33.0 |      | 33.0 | 33.0 |      |      |      |      |      | 29.0 |      |
| Actuated g/C Ratio     |      | 0.47 |      | 0.47 | 0.47 |      |      |      |      |      | 0.41 |      |
| Clearance Time (s)     |      | 3.0  |      | 3.0  | 3.0  |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 1510 |      | 493  | 1668 |      |      |      |      |      | 1986 |      |
| v/s Ratio Prot         |      | 0.08 |      |      | 0.14 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      |      | 0.15 |      |      |      |      |      |      | 0.18 |      |
| v/c Ratio              |      | 0.17 |      | 0.33 | 0.29 |      |      |      |      |      | 0.44 |      |
| Uniform Delay, d1      |      | 10.6 |      | 11.6 | 11.3 |      |      |      |      |      | 14.7 |      |
| Progression Factor     |      | 0.54 |      | 0.44 | 0.47 |      |      |      |      |      | 0.29 |      |
| Incremental Delay, d2  |      | 0.2  |      | 1.4  | 0.3  |      |      |      |      |      | 0.7  |      |
| Delay (s)              |      | 6.0  |      | 6.5  | 5.6  |      |      |      |      |      | 4.9  |      |
| Level of Service       |      | A    |      | A    | A    |      |      |      |      |      | A    |      |
| Approach Delay (s)     |      | 6.0  |      |      | 5.9  |      |      | 0.0  |      |      | 4.9  |      |
| Approach LOS           |      | A    |      |      | A    |      |      | A    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 5.4   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.38  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 63.6% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
5890: Capitol & 26th St

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|-------|------|------|------|------|
| Lane Configurations    | ↖    | ↗    |      | ↖    | ↗     |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0  | 4.0  |      | 4.0  | 4.0   |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor      | 1.00 | 1.00 |      | 1.00 | 1.00  |      |      | 1.00  |      |      | 1.00 |      |
| Fr't                   | 1.00 | 0.99 |      | 1.00 | 0.99  |      |      | 0.97  |      |      | 0.99 |      |
| Flt Protected          | 0.95 | 1.00 |      | 0.95 | 1.00  |      |      | 0.99  |      |      | 0.98 |      |
| Satd. Flow (prot)      | 1770 | 1666 |      | 1770 | 1663  |      |      | 1608  |      |      | 1625 |      |
| Flt Permitted          | 0.44 | 1.00 |      | 0.62 | 1.00  |      |      | 0.96  |      |      | 0.91 |      |
| Satd. Flow (perm)      | 811  | 1666 |      | 1158 | 1663  |      |      | 1563  |      |      | 1514 |      |
| Volume (vph)           | 12   | 209  | 9    | 9    | 405   | 23   | 14   | 39    | 16   | 19   | 21   | 3    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 12   | 209  | 9    | 9    | 405   | 23   | 14   | 39    | 16   | 19   | 21   | 3    |
| RTOR Reduction (vph)   | 0    | 3    | 0    | 0    | 4     | 0    | 0    | 11    | 0    | 0    | 2    | 0    |
| Lane Group Flow (vph)  | 12   | 215  | 0    | 9    | 424   | 0    | 0    | 58    | 0    | 0    | 41   | 0    |
| Parking (#/hr)         |      | 0    | 0    |      | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      |      | Perm |       |      | Perm |       |      | Perm |      |      |
| Protected Phases       |      | 4    |      |      | 8     |      |      | 2     |      |      | 6    |      |
| Permitted Phases       | 4    |      |      | 8    |       |      | 2    |       |      | 6    |      |      |
| Actuated Green, G (s)  | 26.0 | 26.0 |      | 26.0 | 26.0  |      |      | 18.0  |      |      | 18.0 |      |
| Effective Green, g (s) | 25.0 | 25.0 |      | 25.0 | 25.0  |      |      | 17.0  |      |      | 17.0 |      |
| Actuated g/C Ratio     | 0.50 | 0.50 |      | 0.50 | 0.50  |      |      | 0.34  |      |      | 0.34 |      |
| Clearance Time (s)     | 3.0  | 3.0  |      | 3.0  | 3.0   |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)     | 406  | 833  |      | 579  | 832   |      |      | 531   |      |      | 515  |      |
| v/s Ratio Prot         |      | 0.13 |      |      | c0.25 |      |      |       |      |      |      |      |
| v/s Ratio Perm         | 0.01 |      |      | 0.01 |       |      |      | c0.04 |      |      | 0.03 |      |
| v/c Ratio              | 0.03 | 0.26 |      | 0.02 | 0.51  |      |      | 0.11  |      |      | 0.08 |      |
| Uniform Delay, d1      | 6.3  | 7.2  |      | 6.3  | 8.4   |      |      | 11.3  |      |      | 11.2 |      |
| Progression Factor     | 1.00 | 1.00 |      | 1.00 | 1.00  |      |      | 1.00  |      |      | 0.73 |      |
| Incremental Delay, d2  | 0.1  | 0.8  |      | 0.0  | 2.2   |      |      | 0.4   |      |      | 0.3  |      |
| Delay (s)              | 6.5  | 7.9  |      | 6.3  | 10.6  |      |      | 11.7  |      |      | 8.4  |      |
| Level of Service       | A    | A    |      | A    | B     |      |      | B     |      |      | A    |      |
| Approach Delay (s)     |      | 7.9  |      |      | 10.5  |      |      | 11.7  |      |      | 8.4  |      |
| Approach LOS           |      | A    |      |      | B     |      |      | B     |      |      | A    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 9.7   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.35  |                      |     |
| Actuated Cycle Length (s)         | 50.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 34.0% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6481: J Street & 28th Street

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations    |      | ↑↑↑  |      |      |      |      |      | ↑     |      |      | ↓    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      |      |      |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor      |      | 0.91 |      |      |      |      |      | 1.00  |      |      | 1.00 |      |
| Frt                    |      | 1.00 |      |      |      |      |      | 0.92  |      |      | 1.00 |      |
| Flt Protected          |      | 1.00 |      |      |      |      |      | 1.00  |      |      | 0.98 |      |
| Satd. Flow (prot)      |      | 4885 |      |      |      |      |      | 1550  |      |      | 1646 |      |
| Flt Permitted          |      | 1.00 |      |      |      |      |      | 1.00  |      |      | 0.91 |      |
| Satd. Flow (perm)      |      | 4885 |      |      |      |      |      | 1550  |      |      | 1526 |      |
| Volume (vph)           | 33   | 846  | 27   | 0    | 0    | 0    | 0    | 72    | 92   | 19   | 33   | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 33   | 846  | 27   | 0    | 0    | 0    | 0    | 72    | 92   | 19   | 33   | 0    |
| RTOR Reduction (vph)   | 0    | 4    | 0    | 0    | 0    | 0    | 0    | 48    | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 902  | 0    | 0    | 0    | 0    | 0    | 116   | 0    | 0    | 52   | 0    |
| Parking (#/hr)         | 0    | 0    | 0    |      |      |      |      | 0     | 0    | 0    | 0    |      |
| Turn Type              | Perm |      |      |      |      |      | Perm |       |      |      |      |      |
| Protected Phases       |      | 4    |      |      |      |      |      | 2     |      |      | 6    |      |
| Permitted Phases       | 4    |      |      |      |      |      |      |       |      | 6    |      |      |
| Actuated Green, G (s)  |      | 32.0 |      |      |      |      |      | 32.0  |      |      | 32.0 |      |
| Effective Green, g (s) |      | 31.0 |      |      |      |      |      | 31.0  |      |      | 31.0 |      |
| Actuated g/C Ratio     |      | 0.44 |      |      |      |      |      | 0.44  |      |      | 0.44 |      |
| Clearance Time (s)     |      | 3.0  |      |      |      |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 2163 |      |      |      |      |      | 686   |      |      | 676  |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      | c0.07 |      |      |      |      |
| v/s Ratio Perm         |      | 0.18 |      |      |      |      |      |       |      |      | 0.03 |      |
| v/c Ratio              |      | 0.42 |      |      |      |      |      | 0.17  |      |      | 0.08 |      |
| Uniform Delay, d1      |      | 13.3 |      |      |      |      |      | 11.7  |      |      | 11.2 |      |
| Progression Factor     |      | 1.00 |      |      |      |      |      | 0.58  |      |      | 1.00 |      |
| Incremental Delay, d2  |      | 0.6  |      |      |      |      |      | 0.5   |      |      | 0.2  |      |
| Delay (s)              |      | 13.9 |      |      |      |      |      | 7.3   |      |      | 11.5 |      |
| Level of Service       |      | B    |      |      |      |      |      | A     |      |      | B    |      |
| Approach Delay (s)     |      | 13.9 |      |      | 0.0  |      |      | 7.3   |      |      | 11.5 |      |
| Approach LOS           |      | B    |      |      | A    |      |      | A     |      |      | B    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 12.8  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.29  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 40.4% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
6482: K Street & 28th Street

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↕    | ↗    |      | ↕    | ↗    |      | ↕    | ↗    |      | ↕    | ↗    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  |      | 4.0  | 4.0  |      | 4.0  | 4.0  |      | 4.0  | 4.0  |
| Lane Util. Factor      |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |
| Frt                    |      | 1.00 | 0.85 |      | 1.00 | 0.85 |      | 1.00 | 0.85 |      | 1.00 | 0.85 |
| Flt Protected          |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 0.99 | 1.00 |      | 0.99 | 1.00 |
| Satd. Flow (prot)      |      | 1672 | 1425 |      | 1674 | 1425 |      | 1666 | 1425 |      | 1664 | 1425 |
| Flt Permitted          |      | 0.98 | 1.00 |      | 0.99 | 1.00 |      | 0.97 | 1.00 |      | 0.97 | 1.00 |
| Satd. Flow (perm)      |      | 1642 | 1425 |      | 1667 | 1425 |      | 1628 | 1425 |      | 1620 | 1425 |
| Volume (vph)           | 7    | 131  | 15   | 14   | 556  | 78   | 15   | 103  | 65   | 11   | 64   | 8    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 7    | 131  | 15   | 14   | 556  | 78   | 15   | 103  | 65   | 11   | 64   | 8    |
| RTOR Reduction (vph)   | 0    | 0    | 6    | 0    | 0    | 24   | 0    | 0    | 46   | 0    | 0    | 6    |
| Lane Group Flow (vph)  | 0    | 138  | 9    | 0    | 570  | 54   | 0    | 118  | 19   | 0    | 75   | 2    |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      | Perm | Perm |      | Perm | Perm |      | Perm | Perm |      | Perm |
| Protected Phases       |      | 4    |      |      | 8    |      |      | 2    |      |      | 6    |      |
| Permitted Phases       | 4    |      | 4    | 8    |      | 8    | 2    |      | 2    | 6    |      | 6    |
| Actuated Green, G (s)  |      | 43.0 | 43.0 |      | 43.0 | 43.0 |      | 21.0 | 21.0 |      | 21.0 | 21.0 |
| Effective Green, g (s) |      | 42.0 | 42.0 |      | 42.0 | 42.0 |      | 20.0 | 20.0 |      | 20.0 | 20.0 |
| Actuated g/C Ratio     |      | 0.60 | 0.60 |      | 0.60 | 0.60 |      | 0.29 | 0.29 |      | 0.29 | 0.29 |
| Clearance Time (s)     |      | 3.0  | 3.0  |      | 3.0  | 3.0  |      | 3.0  | 3.0  |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |      | 985  | 855  |      | 1000 | 855  |      | 465  | 407  |      | 463  | 407  |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      | 0.08 | 0.01 |      | 0.34 | 0.04 |      | 0.07 | 0.01 |      | 0.05 | 0.00 |
| v/c Ratio              |      | 0.14 | 0.01 |      | 0.57 | 0.06 |      | 0.25 | 0.05 |      | 0.16 | 0.01 |
| Uniform Delay, d1      |      | 6.1  | 5.6  |      | 8.5  | 5.8  |      | 19.3 | 18.1 |      | 18.7 | 17.9 |
| Progression Factor     |      | 1.00 | 1.00 |      | 0.87 | 1.03 |      | 0.75 | 1.09 |      | 0.77 | 0.68 |
| Incremental Delay, d2  |      | 0.3  | 0.0  |      | 2.0  | 0.1  |      | 1.3  | 0.2  |      | 0.7  | 0.0  |
| Delay (s)              |      | 6.4  | 5.7  |      | 9.4  | 6.1  |      | 15.8 | 19.9 |      | 15.2 | 12.2 |
| Level of Service       |      | A    | A    |      | A    | A    |      | B    | B    |      | B    | B    |
| Approach Delay (s)     |      | 6.3  |      |      | 9.0  |      |      | 17.2 |      |      | 14.9 |      |
| Approach LOS           |      | A    |      |      | A    |      |      | B    |      |      | B    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.5  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.47  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 60.1% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6483: L Street & 28th Street

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR   | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|-------|------|------|------|
| Lane Configurations    |      |      |      |      | ↕↕   |      |      | ↕    |       |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      |      | 4.0  |       |      | 4.0  |      |
| Lane Util. Factor      |      |      |      |      | 0.95 |      |      | 1.00 |       |      | 1.00 |      |
| Frt                    |      |      |      |      | 0.99 |      |      | 1.00 |       |      | 0.97 |      |
| Flt Protected          |      |      |      |      | 1.00 |      |      | 0.99 |       |      | 1.00 |      |
| Satd. Flow (prot)      |      |      |      |      | 3333 |      |      | 1655 |       |      | 1629 |      |
| Flt Permitted          |      |      |      |      | 1.00 |      |      | 0.92 |       |      | 1.00 |      |
| Satd. Flow (perm)      |      |      |      |      | 3333 |      |      | 1541 |       |      | 1629 |      |
| Volume (vph)           | 0    | 0    | 0    | 18   | 699  | 38   | 43   | 122  | 0     | 0    | 76   | 20   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 18   | 699  | 38   | 43   | 122  | 0     | 0    | 76   | 20   |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 5    | 0    | 0    | 0    | 0     | 0    | 13   | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 750  | 0    | 0    | 165  | 0     | 0    | 83   | 0    |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    |
| Turn Type              |      |      |      |      | Perm |      |      | Perm |       |      |      |      |
| Protected Phases       |      |      |      |      |      | 6    |      |      | 8     |      |      | 4    |
| Permitted Phases       |      |      |      |      | 6    |      |      | 8    |       |      |      |      |
| Actuated Green, G (s)  |      |      |      |      |      | 37.0 |      |      | 27.0  |      |      | 27.0 |
| Effective Green, g (s) |      |      |      |      |      | 36.0 |      |      | 26.0  |      |      | 26.0 |
| Actuated g/C Ratio     |      |      |      |      |      | 0.51 |      |      | 0.37  |      |      | 0.37 |
| Clearance Time (s)     |      |      |      |      |      | 3.0  |      |      | 3.0   |      |      | 3.0  |
| Lane Grp Cap (vph)     |      |      |      |      |      | 1714 |      |      | 572   |      |      | 605  |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |       |      |      | 0.05 |
| v/s Ratio Perm         |      |      |      |      |      | 0.22 |      |      | c0.11 |      |      |      |
| v/c Ratio              |      |      |      |      |      | 0.44 |      |      | 0.29  |      |      | 0.14 |
| Uniform Delay, d1      |      |      |      |      |      | 10.7 |      |      | 15.5  |      |      | 14.6 |
| Progression Factor     |      |      |      |      |      | 0.45 |      |      | 0.41  |      |      | 1.42 |
| Incremental Delay, d2  |      |      |      |      |      | 0.8  |      |      | 1.2   |      |      | 0.5  |
| Delay (s)              |      |      |      |      |      | 5.6  |      |      | 7.5   |      |      | 21.2 |
| Level of Service       |      |      |      |      |      | A    |      |      | A     |      |      | C    |
| Approach Delay (s)     |      | 0.0  |      |      |      | 5.6  |      |      | 7.5   |      |      | 21.2 |
| Approach LOS           |      | A    |      |      |      | A    |      |      | A     |      |      | C    |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 7.4   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.37  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 43.2% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis

6484: Capitol & 28th Street

7/11/2005



| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|---------------------------|------|------|------|------|-------|------|------|-------|------|------|------|------|
| Lane Configurations       |      | ↕    |      | ↗    | ↖     |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |      | 4.0  |      | 4.0  | 4.0   |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor         |      | 1.00 |      | 1.00 | 1.00  |      |      | 1.00  |      |      | 1.00 |      |
| Fr <sub>t</sub>           |      | 1.00 |      | 1.00 | 0.99  |      |      | 0.98  |      |      | 0.98 |      |
| Fl <sub>t</sub> Protected |      | 1.00 |      | 0.95 | 1.00  |      |      | 0.99  |      |      | 0.98 |      |
| Satd. Flow (prot)         |      | 1666 |      | 1770 | 1651  |      |      | 1628  |      |      | 1617 |      |
| Fl <sub>t</sub> Permitted |      | 0.97 |      | 0.60 | 1.00  |      |      | 0.97  |      |      | 0.87 |      |
| Satd. Flow (perm)         |      | 1615 |      | 1113 | 1651  |      |      | 1592  |      |      | 1437 |      |
| Volume (vph)              | 17   | 251  | 7    | 12   | 469   | 52   | 19   | 129   | 32   | 32   | 42   | 11   |
| Peak-hour factor, PHF     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 17   | 251  | 7    | 12   | 469   | 52   | 19   | 129   | 32   | 32   | 42   | 11   |
| RTOR Reduction (vph)      | 0    | 1    | 0    | 0    | 6     | 0    | 0    | 11    | 0    | 0    | 8    | 0    |
| Lane Group Flow (vph)     | 0    | 274  | 0    | 12   | 515   | 0    | 0    | 169   | 0    | 0    | 77   | 0    |
| Parking (#/hr)            | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type                 | Perm |      |      | Perm |       |      | Perm |       |      | Perm |      |      |
| Protected Phases          |      | 4    |      |      | 8     |      |      | 2     |      |      | 6    |      |
| Permitted Phases          | 4    |      |      | 8    |       |      | 2    |       |      | 6    |      |      |
| Actuated Green, G (s)     |      | 42.0 |      | 42.0 | 42.0  |      |      | 22.0  |      |      | 22.0 |      |
| Effective Green, g (s)    |      | 41.0 |      | 41.0 | 41.0  |      |      | 21.0  |      |      | 21.0 |      |
| Actuated g/C Ratio        |      | 0.59 |      | 0.59 | 0.59  |      |      | 0.30  |      |      | 0.30 |      |
| Clearance Time (s)        |      | 3.0  |      | 3.0  | 3.0   |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)        |      | 946  |      | 652  | 967   |      |      | 478   |      |      | 431  |      |
| v/s Ratio Prot            |      |      |      |      | c0.31 |      |      |       |      |      |      |      |
| v/s Ratio Perm            |      | 0.17 |      | 0.01 |       |      |      | c0.11 |      |      | 0.05 |      |
| v/c Ratio                 |      | 0.29 |      | 0.02 | 0.53  |      |      | 0.35  |      |      | 0.18 |      |
| Uniform Delay, d1         |      | 7.2  |      | 6.1  | 8.7   |      |      | 19.2  |      |      | 18.1 |      |
| Progression Factor        |      | 1.00 |      | 0.27 | 0.37  |      |      | 0.70  |      |      | 0.33 |      |
| Incremental Delay, d2     |      | 0.8  |      | 0.0  | 2.0   |      |      | 2.0   |      |      | 0.9  |      |
| Delay (s)                 |      | 8.0  |      | 1.7  | 5.3   |      |      | 15.4  |      |      | 6.9  |      |
| Level of Service          |      | A    |      | A    | A     |      |      | B     |      |      | A    |      |
| Approach Delay (s)        |      | 8.0  |      |      | 5.2   |      |      | 15.4  |      |      | 6.9  |      |
| Approach LOS              |      | A    |      |      | A     |      |      | B     |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 7.8   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.47  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 46.2% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis

6485: N Street & 28th Street

7/11/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|-------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations    |      | ↔↔    |      |      | ↕    |      |      | ↑     |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      | 4.0  |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor      |      | 0.95  |      |      | 1.00 |      |      | 1.00  |      |      | 1.00 |      |
| Frt                    |      | 1.00  |      |      | 0.91 |      |      | 0.95  |      |      | 1.00 |      |
| Flt Protected          |      | 0.99  |      |      | 0.98 |      |      | 1.00  |      |      | 0.99 |      |
| Satd. Flow (prot)      |      | 3332  |      |      | 1499 |      |      | 1594  |      |      | 1652 |      |
| Flt Permitted          |      | 0.91  |      |      | 0.85 |      |      | 1.00  |      |      | 0.93 |      |
| Satd. Flow (perm)      |      | 3052  |      |      | 1290 |      |      | 1594  |      |      | 1561 |      |
| Volume (vph)           | 45   | 292   | 6    | 38   | 0    | 79   | 0    | 83    | 48   | 18   | 42   | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 45   | 292   | 6    | 38   | 0    | 79   | 0    | 83    | 48   | 18   | 42   | 0    |
| RTOR Reduction (vph)   | 0    | 2     | 0    | 0    | 45   | 0    | 0    | 26    | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 341   | 0    | 0    | 72   | 0    | 0    | 105   | 0    | 0    | 60   | 0    |
| Parking (#/hr)         | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |       | Perm |      |      |      | Perm |       |      |      |      |      |
| Protected Phases       |      | 2     |      |      | 6    |      |      | 8     |      |      | 4    |      |
| Permitted Phases       | 2    |       |      | 6    |      |      |      |       |      | 4    |      |      |
| Actuated Green, G (s)  |      | 31.0  |      |      | 31.0 |      |      | 33.0  |      |      | 33.0 |      |
| Effective Green, g (s) |      | 30.0  |      |      | 30.0 |      |      | 32.0  |      |      | 32.0 |      |
| Actuated g/C Ratio     |      | 0.43  |      |      | 0.43 |      |      | 0.46  |      |      | 0.46 |      |
| Clearance Time (s)     |      | 3.0   |      |      | 3.0  |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 1308  |      |      | 553  |      |      | 729   |      |      | 714  |      |
| v/s Ratio Prot         |      |       |      |      |      |      |      | c0.07 |      |      |      |      |
| v/s Ratio Perm         |      | c0.11 |      |      | 0.06 |      |      |       |      |      | 0.04 |      |
| v/c Ratio              |      | 0.26  |      |      | 0.13 |      |      | 0.14  |      |      | 0.08 |      |
| Uniform Delay, d1      |      | 12.9  |      |      | 12.1 |      |      | 11.0  |      |      | 10.7 |      |
| Progression Factor     |      | 1.00  |      |      | 3.70 |      |      | 1.00  |      |      | 0.99 |      |
| Incremental Delay, d2  |      | 0.5   |      |      | 0.5  |      |      | 0.4   |      |      | 0.2  |      |
| Delay (s)              |      | 13.4  |      |      | 45.2 |      |      | 11.5  |      |      | 10.8 |      |
| Level of Service       |      | B     |      |      | D    |      |      | B     |      |      | B    |      |
| Approach Delay (s)     |      | 13.4  |      |      | 45.2 |      |      | 11.5  |      |      | 10.8 |      |
| Approach LOS           |      | B     |      |      | D    |      |      | B     |      |      | B    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 18.5  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.20  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 40.5% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
 6511: K Street & Alhambra

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|-------|------|
| Lane Configurations    |      | ↕    | ↗    |      | ↕     |      |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  |      | 4.0   |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor      |      | 1.00 | 1.00 |      | 1.00  |      |      | 0.95 |      |      | 0.95  |      |
| Frt                    |      | 1.00 | 0.85 |      | 0.99  |      |      | 0.99 |      |      | 0.96  |      |
| Flt Protected          |      | 0.97 | 1.00 |      | 0.99  |      |      | 0.99 |      |      | 1.00  |      |
| Satd. Flow (prot)      |      | 1812 | 1583 |      | 1822  |      |      | 3451 |      |      | 3402  |      |
| Flt Permitted          |      | 0.84 | 1.00 |      | 0.93  |      |      | 0.58 |      |      | 0.95  |      |
| Satd. Flow (perm)      |      | 1571 | 1583 |      | 1722  |      |      | 2026 |      |      | 3247  |      |
| Volume (vph)           | 45   | 35   | 97   | 25   | 61    | 6    | 131  | 308  | 36   | 3    | 784   | 273  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 45   | 35   | 97   | 25   | 61    | 6    | 131  | 308  | 36   | 3    | 784   | 273  |
| RTOR Reduction (vph)   | 0    | 0    | 64   | 0    | 3     | 0    | 0    | 9    | 0    | 0    | 49    | 0    |
| Lane Group Flow (vph)  | 0    | 80   | 33   | 0    | 89    | 0    | 0    | 466  | 0    | 0    | 1011  | 0    |
| Turn Type              | Perm |      | Perm | Perm |       |      | Perm |      |      | Perm |       |      |
| Protected Phases       |      | 4    |      |      | 8     |      |      | 2    |      |      |       | 6    |
| Permitted Phases       | 4    |      | 4    | 8    |       |      | 2    |      |      | 6    |       |      |
| Actuated Green, G (s)  |      | 25.0 | 25.0 |      | 25.0  |      |      | 39.0 |      |      | 39.0  |      |
| Effective Green, g (s) |      | 24.0 | 24.0 |      | 24.0  |      |      | 38.0 |      |      | 38.0  |      |
| Actuated g/C Ratio     |      | 0.34 | 0.34 |      | 0.34  |      |      | 0.54 |      |      | 0.54  |      |
| Clearance Time (s)     |      | 3.0  | 3.0  |      | 3.0   |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)     |      | 539  | 543  |      | 590   |      |      | 1100 |      |      | 1763  |      |
| v/s Ratio Prot         |      |      |      |      |       |      |      |      |      |      |       |      |
| v/s Ratio Perm         |      | 0.05 | 0.02 |      | c0.05 |      |      | 0.23 |      |      | c0.31 |      |
| v/c Ratio              |      | 0.15 | 0.06 |      | 0.15  |      |      | 0.42 |      |      | 0.57  |      |
| Uniform Delay, d1      |      | 15.9 | 15.4 |      | 15.9  |      |      | 9.5  |      |      | 10.6  |      |
| Progression Factor     |      | 0.98 | 1.73 |      | 1.00  |      |      | 0.20 |      |      | 0.54  |      |
| Incremental Delay, d2  |      | 0.6  | 0.2  |      | 0.5   |      |      | 1.0  |      |      | 1.1   |      |
| Delay (s)              |      | 16.2 | 27.0 |      | 16.5  |      |      | 2.9  |      |      | 6.8   |      |
| Level of Service       |      | B    | C    |      | B     |      |      | A    |      |      | A     |      |
| Approach Delay (s)     |      | 22.1 |      |      | 16.5  |      |      | 2.9  |      |      | 6.8   |      |
| Approach LOS           |      | C    |      |      | B     |      |      | A    |      |      | A     |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 7.8   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.41  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 65.6% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 9622: K Street & 30th Street

7/11/2005



| Movement                          | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations               | ↖    | ↑    |      |      | ↑     | ↗    |      | ↑↑↑  |      |      |      |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               | 4.0  | 4.0  |      |      | 4.0   | 4.0  |      | 4.0  |      |      |      |      |
| Lane Util. Factor                 | 1.00 | 1.00 |      |      | 1.00  | 1.00 |      | 0.91 |      |      |      |      |
| Fr <sub>t</sub>                   | 1.00 | 1.00 |      |      | 1.00  | 0.85 |      | 0.98 |      |      |      |      |
| Fl <sub>t</sub> Protected         | 0.95 | 1.00 |      |      | 1.00  | 1.00 |      | 0.98 |      |      |      |      |
| Satd. Flow (prot)                 | 1770 | 1863 |      |      | 1863  | 1583 |      | 4918 |      |      |      |      |
| Fl <sub>t</sub> Permitted         | 0.48 | 1.00 |      |      | 1.00  | 1.00 |      | 0.98 |      |      |      |      |
| Satd. Flow (perm)                 | 893  | 1863 |      |      | 1863  | 1583 |      | 4918 |      |      |      |      |
| Volume (vph)                      | 55   | 146  | 0    | 0    | 339   | 80   | 305  | 544  | 112  | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 55   | 146  | 0    | 0    | 339   | 80   | 305  | 544  | 112  | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0    | 0    | 0    | 0    | 0     | 42   | 0    | 24   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 55   | 146  | 0    | 0    | 339   | 38   | 0    | 937  | 0    | 0    | 0    | 0    |
| Turn Type                         | Perm |      |      |      | Perm  |      | Perm |      |      |      |      |      |
| Protected Phases                  | 4    |      |      |      | 8     |      |      |      | 2    |      |      |      |
| Permitted Phases                  | 4    |      |      |      |       |      | 8    |      | 2    |      |      |      |
| Actuated Green, G (s)             | 34.0 | 34.0 |      |      | 34.0  | 34.0 |      | 30.0 |      |      |      |      |
| Effective Green, g (s)            | 33.0 | 33.0 |      |      | 33.0  | 33.0 |      | 29.0 |      |      |      |      |
| Actuated g/C Ratio                | 0.47 | 0.47 |      |      | 0.47  | 0.47 |      | 0.41 |      |      |      |      |
| Clearance Time (s)                | 3.0  | 3.0  |      |      | 3.0   | 3.0  |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)                | 421  | 878  |      |      | 878   | 746  |      | 2037 |      |      |      |      |
| v/s Ratio Prot                    |      | 0.08 |      |      | c0.18 |      |      |      |      |      |      |      |
| v/s Ratio Perm                    | 0.06 |      |      |      |       | 0.02 |      | 0.19 |      |      |      |      |
| v/c Ratio                         | 0.13 | 0.17 |      |      | 0.39  | 0.05 |      | 0.46 |      |      |      |      |
| Uniform Delay, d <sub>1</sub>     | 10.4 | 10.6 |      |      | 12.0  | 10.0 |      | 14.8 |      |      |      |      |
| Progression Factor                | 0.96 | 0.93 |      |      | 0.74  | 0.63 |      | 0.37 |      |      |      |      |
| Incremental Delay, d <sub>2</sub> | 0.6  | 0.4  |      |      | 1.1   | 0.1  |      | 0.7  |      |      |      |      |
| Delay (s)                         | 10.7 | 10.2 |      |      | 10.0  | 6.5  |      | 6.2  |      |      |      |      |
| Level of Service                  | B    | B    |      |      | A     | A    |      | A    |      |      |      |      |
| Approach Delay (s)                |      | 10.4 |      |      | 9.3   |      |      | 6.2  |      |      | 0.0  |      |
| Approach LOS                      |      | B    |      |      | A     |      |      | A    |      |      | A    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 7.6   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.42  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 55.4% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

EXISTING PLUS TRINITY PROJECT WITH SMART PLAN

PM Peak Hour

Signalized Intersections

(pm3)



HCM Signalized Intersection Capacity Analysis  
 2004: L Street & 21th Street

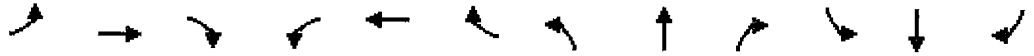
7/11/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT  | WBR  | NBL                  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|-------|------|------|------|----------------------|------|------|------|------|------|
| Lane Configurations               |      |      |       |      | ↑↓   |      |                      | ↑↑↑  |      |      |      |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      |      |       |      | 4.0  |      |                      | 4.0  |      |      |      |      |
| Lane Util. Factor                 |      |      |       |      | 0.95 |      |                      | 0.91 |      |      |      |      |
| Frt                               |      |      |       |      | 0.99 |      |                      | 1.00 |      |      |      |      |
| Flt Protected                     |      |      |       |      | 1.00 |      |                      | 0.99 |      |      |      |      |
| Satd. Flow (prot)                 |      |      |       |      | 3317 |      |                      | 4889 |      |      |      |      |
| Flt Permitted                     |      |      |       |      | 1.00 |      |                      | 0.99 |      |      |      |      |
| Satd. Flow (perm)                 |      |      |       |      | 3317 |      |                      | 4889 |      |      |      |      |
| Volume (vph)                      | 0    | 0    | 0     | 0    | 582  | 57   | 158                  | 1278 | 0    | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 0    | 582  | 57   | 158                  | 1278 | 0    | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 0    | 13   | 0    | 0                    | 31   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 0    | 626  | 0    | 0                    | 1405 | 0    | 0    | 0    | 0    |
| Parking (#/hr)                    | 0    | 0    |       |      | 0    | 0    | 0                    | 0    | 0    |      |      |      |
| Turn Type                         |      |      |       |      |      |      | Perm                 |      |      |      |      |      |
| Protected Phases                  |      |      |       |      | 6    |      |                      | 8    |      |      |      |      |
| Permitted Phases                  |      |      |       |      |      |      | 8                    |      |      |      |      |      |
| Actuated Green, G (s)             |      |      |       |      | 21.0 |      |                      | 23.0 |      |      |      |      |
| Effective Green, g (s)            |      |      |       |      | 20.0 |      |                      | 22.0 |      |      |      |      |
| Actuated g/C Ratio                |      |      |       |      | 0.40 |      |                      | 0.44 |      |      |      |      |
| Clearance Time (s)                |      |      |       |      | 3.0  |      |                      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)                |      |      |       |      | 1327 |      |                      | 2151 |      |      |      |      |
| v/s Ratio Prot                    |      |      |       |      | 0.19 |      |                      |      |      |      |      |      |
| v/s Ratio Perm                    |      |      |       |      |      |      |                      | 0.29 |      |      |      |      |
| v/c Ratio                         |      |      |       |      | 0.47 |      |                      | 0.65 |      |      |      |      |
| Uniform Delay, d1                 |      |      |       |      | 11.1 |      |                      | 11.0 |      |      |      |      |
| Progression Factor                |      |      |       |      | 0.42 |      |                      | 1.00 |      |      |      |      |
| Incremental Delay, d2             |      |      |       |      | 1.2  |      |                      | 1.6  |      |      |      |      |
| Delay (s)                         |      |      |       |      | 5.9  |      |                      | 12.6 |      |      |      |      |
| Level of Service                  |      |      |       |      | A    |      |                      | B    |      |      |      |      |
| Approach Delay (s)                |      | 0.0  |       |      | 5.9  |      |                      | 12.6 |      |      | 0.0  |      |
| Approach LOS                      |      | A    |       |      | A    |      |                      | B    |      |      | A    |      |
| <b>Intersection Summary</b>       |      |      |       |      |      |      |                      |      |      |      |      |      |
| HCM Average Control Delay         |      |      | 10.5  |      |      |      | HCM Level of Service |      |      | B    |      |      |
| HCM Volume to Capacity ratio      |      |      | 0.57  |      |      |      |                      |      |      |      |      |      |
| Actuated Cycle Length (s)         |      |      | 50.0  |      |      |      | Sum of lost time (s) |      |      | 8.0  |      |      |
| Intersection Capacity Utilization |      |      | 52.5% |      |      |      | ICU Level of Service |      |      | A    |      |      |
| Analysis Period (min)             |      |      | 15    |      |      |      |                      |      |      |      |      |      |
| c Critical Lane Group             |      |      |       |      |      |      |                      |      |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
 2012: J Street & 21th Street

7/11/2005



| Movement                          | EBL  | EBT   | EBR  | WBL  | WBT                  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|-------|------|------|----------------------|------|------|-------|------|------|------|------|
| Lane Configurations               |      | ↑↑↑   |      |      |                      |      |      | ↑↑↑   |      |      |      |      |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900 | 1900                 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0   |      |      |                      |      |      | 4.0   |      |      |      |      |
| Lane Util. Factor                 |      | 0.91  |      |      |                      |      |      | 0.91  |      |      |      |      |
| Frt                               |      | 1.00  |      |      |                      |      |      | 0.97  |      |      |      |      |
| Flt Protected                     |      | 1.00  |      |      |                      |      |      | 1.00  |      |      |      |      |
| Satd. Flow (prot)                 |      | 4899  |      |      |                      |      |      | 4788  |      |      |      |      |
| Flt Permitted                     |      | 1.00  |      |      |                      |      |      | 1.00  |      |      |      |      |
| Satd. Flow (perm)                 |      | 4899  |      |      |                      |      |      | 4788  |      |      |      |      |
| Volume (vph)                      | 101  | 1402  | 0    | 0    | 0                    | 0    | 0    | 1079  | 227  | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00 | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 101  | 1402  | 0    | 0    | 0                    | 0    | 0    | 1079  | 227  | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0    | 16    | 0    | 0    | 0                    | 0    | 0    | 8     | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 0    | 1487  | 0    | 0    | 0                    | 0    | 0    | 1298  | 0    | 0    | 0    | 0    |
| Parking (#/hr)                    | 0    | 0     |      |      |                      |      |      | 0     | 0    |      |      |      |
| Turn Type                         | Perm |       |      |      |                      |      |      |       |      |      |      |      |
| Protected Phases                  |      | 2     |      |      |                      |      |      | 8     |      |      |      |      |
| Permitted Phases                  | 2    |       |      |      |                      |      |      |       |      |      |      |      |
| Actuated Green, G (s)             |      | 23.0  |      |      |                      |      |      | 21.0  |      |      |      |      |
| Effective Green, g (s)            |      | 22.0  |      |      |                      |      |      | 20.0  |      |      |      |      |
| Actuated g/C Ratio                |      | 0.44  |      |      |                      |      |      | 0.40  |      |      |      |      |
| Clearance Time (s)                |      | 3.0   |      |      |                      |      |      | 3.0   |      |      |      |      |
| Lane Grp Cap (vph)                |      | 2156  |      |      |                      |      |      | 1915  |      |      |      |      |
| v/s Ratio Prot                    |      |       |      |      |                      |      |      | c0.27 |      |      |      |      |
| v/s Ratio Perm                    |      | 0.30  |      |      |                      |      |      |       |      |      |      |      |
| v/c Ratio                         |      | 0.69  |      |      |                      |      |      | 0.68  |      |      |      |      |
| Uniform Delay, d1                 |      | 11.3  |      |      |                      |      |      | 12.3  |      |      |      |      |
| Progression Factor                |      | 0.50  |      |      |                      |      |      | 0.24  |      |      |      |      |
| Incremental Delay, d2             |      | 1.5   |      |      |                      |      |      | 1.5   |      |      |      |      |
| Delay (s)                         |      | 7.0   |      |      |                      |      |      | 4.5   |      |      |      |      |
| Level of Service                  |      | A     |      |      |                      |      |      | A     |      |      |      |      |
| Approach Delay (s)                |      | 7.0   |      |      | 0.0                  |      |      | 4.5   |      |      | 0.0  |      |
| Approach LOS                      |      | A     |      |      | A                    |      |      | A     |      |      | A    |      |
| <b>Intersection Summary</b>       |      |       |      |      |                      |      |      |       |      |      |      |      |
| HCM Average Control Delay         |      | 5.8   |      |      | HCM Level of Service |      |      | A     |      |      |      |      |
| HCM Volume to Capacity ratio      |      | 0.68  |      |      |                      |      |      |       |      |      |      |      |
| Actuated Cycle Length (s)         |      | 50.0  |      |      | Sum of lost time (s) |      |      | 8.0   |      |      |      |      |
| Intersection Capacity Utilization |      | 61.7% |      |      | ICU Level of Service |      |      | B     |      |      |      |      |
| Analysis Period (min)             |      | 15    |      |      |                      |      |      |       |      |      |      |      |
| c Critical Lane Group             |      |       |      |      |                      |      |      |       |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
 2074: J Street & 19th Street

7/11/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT                  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |  |
|-----------------------------------|------|------|-------|------|----------------------|------|------|------|------|------|------|------|--|
| Lane Configurations               |      | ↑↑↑  |       |      |                      |      |      |      |      |      | ↑↑↑  |      |  |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |  |
| Total Lost time (s)               |      | 4.0  |       |      |                      |      |      |      |      |      | 4.0  |      |  |
| Lane Util. Factor                 |      | 0.91 |       |      |                      |      |      |      |      |      | 0.91 |      |  |
| Frt                               |      | 0.97 |       |      |                      |      |      |      |      |      | 1.00 |      |  |
| Flt Protected                     |      | 1.00 |       |      |                      |      |      |      |      |      | 0.99 |      |  |
| Satd. Flow (prot)                 |      | 4759 |       |      |                      |      |      |      |      |      | 4846 |      |  |
| Flt Permitted                     |      | 1.00 |       |      |                      |      |      |      |      |      | 0.99 |      |  |
| Satd. Flow (perm)                 |      | 4759 |       |      |                      |      |      |      |      |      | 4846 |      |  |
| Volume (vph)                      | 0    | 1282 | 347   | 0    | 0                    | 0    | 0    | 0    | 0    | 169  | 420  | 0    |  |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |  |
| Adj. Flow (vph)                   | 0    | 1282 | 347   | 0    | 0                    | 0    | 0    | 0    | 0    | 169  | 420  | 0    |  |
| RTOR Reduction (vph)              | 0    | 98   | 0     | 0    | 0                    | 0    | 0    | 0    | 0    | 0    | 22   | 0    |  |
| Lane Group Flow (vph)             | 0    | 1532 | 0     | 0    | 0                    | 0    | 0    | 0    | 0    | 0    | 567  | 0    |  |
| Parking (#/hr)                    |      | 0    | 0     |      |                      |      |      |      |      | 0    | 0    |      |  |
| Turn Type                         |      |      |       |      |                      |      |      |      |      | Perm |      |      |  |
| Protected Phases                  |      | 2    |       |      |                      |      |      |      |      |      | 4    |      |  |
| Permitted Phases                  |      |      |       |      |                      |      |      |      |      | 4    |      |      |  |
| Actuated Green, G (s)             |      | 26.0 |       |      |                      |      |      |      |      |      | 18.0 |      |  |
| Effective Green, g (s)            |      | 25.0 |       |      |                      |      |      |      |      |      | 17.0 |      |  |
| Actuated g/C Ratio                |      | 0.50 |       |      |                      |      |      |      |      |      | 0.34 |      |  |
| Clearance Time (s)                |      | 3.0  |       |      |                      |      |      |      |      |      | 3.0  |      |  |
| Lane Grp Cap (vph)                |      | 2380 |       |      |                      |      |      |      |      |      | 1648 |      |  |
| v/s Ratio Prot                    |      | 0.32 |       |      |                      |      |      |      |      |      |      |      |  |
| v/s Ratio Perm                    |      |      |       |      |                      |      |      |      |      |      | 0.12 |      |  |
| w/c Ratio                         |      | 0.64 |       |      |                      |      |      |      |      |      | 0.34 |      |  |
| Uniform Delay, d1                 |      | 9.2  |       |      |                      |      |      |      |      |      | 12.3 |      |  |
| Progression Factor                |      | 1.00 |       |      |                      |      |      |      |      |      | 1.00 |      |  |
| Incremental Delay, d2             |      | 1.4  |       |      |                      |      |      |      |      |      | 0.6  |      |  |
| Delay (s)                         |      | 10.6 |       |      |                      |      |      |      |      |      | 12.9 |      |  |
| Level of Service                  |      | B    |       |      |                      |      |      |      |      |      | B    |      |  |
| Approach Delay (s)                |      | 10.6 |       |      | 0.0                  |      |      | 0.0  |      |      | 12.9 |      |  |
| Approach LOS                      |      | B    |       |      | A                    |      |      | A    |      |      | B    |      |  |
| <b>Intersection Summary</b>       |      |      |       |      |                      |      |      |      |      |      |      |      |  |
| HCM Average Control Delay         |      |      | 11.2  |      | HCM Level of Service |      |      |      |      |      |      | B    |  |
| HCM Volume to Capacity ratio      |      |      | 0.52  |      |                      |      |      |      |      |      |      |      |  |
| Actuated Cycle Length (s)         |      |      | 50.0  |      | Sum of lost time (s) |      |      |      |      |      | 8.0  |      |  |
| Intersection Capacity Utilization |      |      | 50.7% |      | ICU Level of Service |      |      |      |      |      | A    |      |  |
| Analysis Period (min)             |      |      | 15    |      |                      |      |      |      |      |      |      |      |  |
| c Critical Lane Group             |      |      |       |      |                      |      |      |      |      |      |      |      |  |

HCM Signalized Intersection Capacity Analysis  
 2088: L Street & 29th Street

7/11/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT   | WBR                  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|-----------------------------------|------|------|-------|------|-------|----------------------|------|------|------|------|-------|------|
| Lane Configurations               |      |      |       | ↘    | ↕     |                      |      |      |      |      | ↕     | ↗    |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900  | 1900                 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)               |      |      |       | 4.0  | 4.0   |                      |      |      |      |      | 4.0   | 4.0  |
| Lane Util. Factor                 |      |      |       | 1.00 | 0.95  |                      |      |      |      |      | 0.86  | 0.86 |
| Frt                               |      |      |       | 1.00 | 1.00  |                      |      |      |      |      | 1.00  | 0.85 |
| Flt Protected                     |      |      |       | 0.95 | 1.00  |                      |      |      |      |      | 1.00  | 1.00 |
| Satd. Flow (prot)                 |      |      |       | 1770 | 3539  |                      |      |      |      |      | 4646  | 1226 |
| Flt Permitted                     |      |      |       | 0.95 | 1.00  |                      |      |      |      |      | 1.00  | 1.00 |
| Satd. Flow (perm)                 |      |      |       | 1770 | 3539  |                      |      |      |      |      | 4646  | 1226 |
| Volume (vph)                      | 0    | 0    | 0     | 257  | 467   | 0                    | 0    | 0    | 0    | 0    | 1111  | 152  |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 257  | 467   | 0                    | 0    | 0    | 0    | 0    | 1111  | 152  |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 27   | 0     | 0                    | 0    | 0    | 0    | 0    | 0     | 80   |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 230  | 467   | 0                    | 0    | 0    | 0    | 0    | 1111  | 72   |
| Parking (#/hr)                    |      |      | 0     |      |       |                      |      |      |      |      | 0     | 0    |
| Turn Type                         |      |      |       | Perm |       |                      |      |      |      |      |       | Perm |
| Protected Phases                  |      |      |       |      | 6     |                      |      |      |      |      | 4     |      |
| Permitted Phases                  |      |      |       | 6    |       |                      |      |      |      |      |       | 4    |
| Actuated Green, G (s)             |      |      |       | 30.0 | 30.0  |                      |      |      |      |      | 34.0  | 34.0 |
| Effective Green, g (s)            |      |      |       | 29.0 | 29.0  |                      |      |      |      |      | 33.0  | 33.0 |
| Actuated g/C Ratio                |      |      |       | 0.41 | 0.41  |                      |      |      |      |      | 0.47  | 0.47 |
| Clearance Time (s)                |      |      |       | 3.0  | 3.0   |                      |      |      |      |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)                |      |      |       | 733  | 1466  |                      |      |      |      |      | 2190  | 578  |
| v/s Ratio Prot                    |      |      |       |      | c0.13 |                      |      |      |      |      | c0.24 |      |
| v/s Ratio Perm                    |      |      |       | 0.13 |       |                      |      |      |      |      |       | 0.06 |
| v/c Ratio                         |      |      |       | 0.31 | 0.32  |                      |      |      |      |      | 0.51  | 0.12 |
| Uniform Delay, d1                 |      |      |       | 13.8 | 13.8  |                      |      |      |      |      | 12.9  | 10.4 |
| Progression Factor                |      |      |       | 0.30 | 0.42  |                      |      |      |      |      | 0.82  | 1.99 |
| Incremental Delay, d2             |      |      |       | 1.1  | 0.6   |                      |      |      |      |      | 0.8   | 0.4  |
| Delay (s)                         |      |      |       | 5.3  | 6.3   |                      |      |      |      |      | 11.3  | 21.0 |
| Level of Service                  |      |      |       | A    | A     |                      |      |      |      |      | B     | C    |
| Approach Delay (s)                |      | 0.0  |       |      | 5.9   |                      |      | 0.0  |      |      | 12.4  |      |
| Approach LOS                      |      | A    |       |      | A     |                      |      | A    |      |      | B     |      |
| <b>Intersection Summary</b>       |      |      |       |      |       |                      |      |      |      |      |       |      |
| HCM Average Control Delay         |      |      | 10.1  |      |       | HCM Level of Service |      |      |      |      | B     |      |
| HCM Volume to Capacity ratio      |      |      | 0.42  |      |       |                      |      |      |      |      |       |      |
| Actuated Cycle Length (s)         |      |      | 70.0  |      |       | Sum of lost time (s) |      |      |      | 8.0  |       |      |
| Intersection Capacity Utilization |      |      | 43.5% |      |       | ICU Level of Service |      |      |      | A    |       |      |
| Analysis Period (min)             |      |      | 15    |      |       |                      |      |      |      |      |       |      |
| c Critical Lane Group             |      |      |       |      |       |                      |      |      |      |      |       |      |



HCM Signalized Intersection Capacity Analysis  
 2239: L Street & Alhambra

7/11/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|-------|------|------|------|------|------|------|------|------|------|
| Lane Configurations               |      |      |       |      | ↕    |      |      | ↕    |      |      | ↕    | ↗    |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      |      |       |      | 4.0  |      |      | 4.0  |      |      | 4.0  | 4.0  |
| Lane Util. Factor                 |      |      |       |      | 1.00 |      |      | 1.00 |      |      | 1.00 | 1.00 |
| Frt                               |      |      |       |      | 0.97 |      |      | 0.99 |      |      | 1.00 | 0.85 |
| Flt Protected                     |      |      |       |      | 0.99 |      |      | 1.00 |      |      | 1.00 | 1.00 |
| Satd. Flow (prot)                 |      |      |       |      | 1614 |      |      | 1649 |      |      | 1857 | 1425 |
| Flt Permitted                     |      |      |       |      | 0.99 |      |      | 0.90 |      |      | 0.95 | 1.00 |
| Satd. Flow (perm)                 |      |      |       |      | 1614 |      |      | 1498 |      |      | 1763 | 1425 |
| Volume (vph)                      | 0    | 0    | 0     | 30   | 155  | 56   | 57   | 512  | 54   | 42   | 655  | 295  |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 30   | 155  | 56   | 57   | 512  | 54   | 42   | 655  | 295  |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 0    | 16   | 0    | 0    | 5    | 0    | 0    | 0    | 110  |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 0    | 225  | 0    | 0    | 618  | 0    | 0    | 697  | 185  |
| Parking (#/hr)                    |      |      |       | 0    | 0    | 0    | 0    | 0    | 0    |      |      | 0    |
| Turn Type                         |      |      |       | Perm |      |      | Perm |      |      | Perm |      | Perm |
| Protected Phases                  |      |      |       |      | 6    |      |      | 8    |      |      | 4    |      |
| Permitted Phases                  |      |      |       | 6    |      |      | 8    |      |      | 4    |      | 4    |
| Actuated Green, G (s)             |      |      |       |      | 19.0 |      |      | 45.0 |      |      | 45.0 | 45.0 |
| Effective Green, g (s)            |      |      |       |      | 18.0 |      |      | 44.0 |      |      | 44.0 | 44.0 |
| Actuated g/C Ratio                |      |      |       |      | 0.26 |      |      | 0.63 |      |      | 0.63 | 0.63 |
| Clearance Time (s)                |      |      |       |      | 3.0  |      |      | 3.0  |      |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)                |      |      |       |      | 415  |      |      | 942  |      |      | 1108 | 896  |
| v/s Ratio Prot                    |      |      |       |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm                    |      |      |       |      | 0.14 |      |      | 0.41 |      |      | 0.40 | 0.13 |
| v/c Ratio                         |      |      |       |      | 0.54 |      |      | 0.66 |      |      | 0.63 | 0.21 |
| Uniform Delay, d1                 |      |      |       |      | 22.4 |      |      | 8.2  |      |      | 8.0  | 5.6  |
| Progression Factor                |      |      |       |      | 1.00 |      |      | 0.32 |      |      | 0.87 | 1.82 |
| Incremental Delay, d2             |      |      |       |      | 5.0  |      |      | 2.0  |      |      | 2.4  | 0.4  |
| Delay (s)                         |      |      |       |      | 27.5 |      |      | 4.6  |      |      | 9.4  | 10.5 |
| Level of Service                  |      |      |       |      | C    |      |      | A    |      |      | A    | B    |
| Approach Delay (s)                |      | 0.0  |       |      | 27.5 |      |      | 4.6  |      |      | 9.7  |      |
| Approach LOS                      |      | A    |       |      | C    |      |      | A    |      |      | A    |      |
| <b>Intersection Summary</b>       |      |      |       |      |      |      |      |      |      |      |      |      |
| HCM Average Control Delay         |      |      | 10.3  |      |      |      |      |      |      |      |      | B    |
| HCM Volume to Capacity ratio      |      |      | 0.62  |      |      |      |      |      |      |      |      |      |
| Actuated Cycle Length (s)         |      |      | 70.0  |      |      |      |      |      |      |      |      | 8.0  |
| Intersection Capacity Utilization |      |      | 93.4% |      |      |      |      |      |      |      |      | F    |
| Analysis Period (min)             |      |      | 15    |      |      |      |      |      |      |      |      |      |
| c Critical Lane Group             |      |      |       |      |      |      |      |      |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
 3426: L Street & 19th Street

7/11/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR                      |
|-----------------------------------|------|------|-------|------|------|------|------|------|------|------|-------|--------------------------|
| Lane Configurations               |      |      |       |      | ↑↑   |      |      |      |      |      | ↑↑↑   |                          |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900                     |
| Total Lost time (s)               |      |      |       |      | 4.0  |      |      |      |      |      | 4.0   |                          |
| Lane Util. Factor                 |      |      |       |      | 0.95 |      |      |      |      |      | 0.91  |                          |
| Frt                               |      |      |       |      | 1.00 |      |      |      |      |      | 0.99  |                          |
| Flt Protected                     |      |      |       |      | 0.99 |      |      |      |      |      | 1.00  |                          |
| Satd. Flow (prot)                 |      |      |       |      | 3332 |      |      |      |      |      | 4884  |                          |
| Flt Permitted                     |      |      |       |      | 0.99 |      |      |      |      |      | 1.00  |                          |
| Satd. Flow (perm)                 |      |      |       |      | 3332 |      |      |      |      |      | 4884  |                          |
| Volume (vph)                      | 0    | 0    | 0     | 138  | 631  | 0    | 0    | 0    | 0    | 0    | 947   | 43                       |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00                     |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 138  | 631  | 0    | 0    | 0    | 0    | 0    | 947   | 43                       |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 0    | 21   | 0    | 0    | 0    | 0    | 0    | 10    | 0                        |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 0    | 748  | 0    | 0    | 0    | 0    | 0    | 980   | 0                        |
| Parking (#/hr)                    |      | 0    | 0     | 0    | 0    |      |      |      |      | 0    | 0     | 0                        |
| Turn Type                         |      |      |       |      | Perm |      |      |      |      |      |       |                          |
| Protected Phases                  |      |      |       |      | 6    |      |      |      |      |      | 4     |                          |
| Permitted Phases                  |      |      |       | 6    |      |      |      |      |      |      |       |                          |
| Actuated Green, G (s)             |      |      |       |      | 24.0 |      |      |      |      |      | 20.0  |                          |
| Effective Green, g (s)            |      |      |       |      | 23.0 |      |      |      |      |      | 19.0  |                          |
| Actuated g/C Ratio                |      |      |       |      | 0.46 |      |      |      |      |      | 0.38  |                          |
| Clearance Time (s)                |      |      |       |      | 3.0  |      |      |      |      |      | 3.0   |                          |
| Lane Grp Cap (vph)                |      |      |       |      | 1533 |      |      |      |      |      | 1856  |                          |
| v/s Ratio Prot                    |      |      |       |      |      |      |      |      |      |      | c0.20 |                          |
| v/s Ratio Perm                    |      |      |       |      | 0.22 |      |      |      |      |      |       |                          |
| v/c Ratio                         |      |      |       |      | 0.49 |      |      |      |      |      | 0.53  |                          |
| Uniform Delay, d1                 |      |      |       |      | 9.4  |      |      |      |      |      | 12.0  |                          |
| Progression Factor                |      |      |       |      | 0.38 |      |      |      |      |      | 0.76  |                          |
| Incremental Delay, d2             |      |      |       |      | 1.0  |      |      |      |      |      | 1.0   |                          |
| Delay (s)                         |      |      |       |      | 4.5  |      |      |      |      |      | 10.2  |                          |
| Level of Service                  |      |      |       |      | A    |      |      |      |      |      | B     |                          |
| Approach Delay (s)                |      | 0.0  |       |      | 4.5  |      |      | 0.0  |      |      | 10.2  |                          |
| Approach LOS                      |      | A    |       |      | A    |      |      | A    |      |      | B     |                          |
| <b>Intersection Summary</b>       |      |      |       |      |      |      |      |      |      |      |       |                          |
| HCM Average Control Delay         |      |      | 7.7   |      |      |      |      |      |      |      |       | HCM Level of Service A   |
| HCM Volume to Capacity ratio      |      |      | 0.51  |      |      |      |      |      |      |      |       |                          |
| Actuated Cycle Length (s)         |      |      | 50.0  |      |      |      |      |      |      |      |       | Sum of lost time (s) 8.0 |
| Intersection Capacity Utilization |      |      | 47.4% |      |      |      |      |      |      |      |       | ICU Level of Service A   |
| Analysis Period (min)             |      |      | 15    |      |      |      |      |      |      |      |       |                          |
| c Critical Lane Group             |      |      |       |      |      |      |      |      |      |      |       |                          |

HCM Signalized Intersection Capacity Analysis  
 3427: L Street & 26th St

7/11/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|-------|------|------|------|------|------|------|------|------|------|
| Lane Configurations               |      |      |       |      | ↕↔   |      |      | ↕    |      |      | ↕    |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      |      |       |      | 4.0  |      |      | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor                 |      |      |       |      | 0.95 |      |      | 1.00 |      |      | 1.00 |      |
| Frt                               |      |      |       |      | 0.99 |      |      | 1.00 |      |      | 0.96 |      |
| Flt Protected                     |      |      |       |      | 1.00 |      |      | 0.98 |      |      | 1.00 |      |
| Satd. Flow (prot)                 |      |      |       |      | 3329 |      |      | 1649 |      |      | 1603 |      |
| Flt Permitted                     |      |      |       |      | 1.00 |      |      | 0.92 |      |      | 1.00 |      |
| Satd. Flow (perm)                 |      |      |       |      | 3329 |      |      | 1538 |      |      | 1603 |      |
| Volume (vph)                      | 0    | 0    | 0     | 15   | 493  | 31   | 29   | 59   | 0    | 0    | 69   | 33   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 15   | 493  | 31   | 29   | 59   | 0    | 0    | 69   | 33   |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 0    | 9    | 0    | 0    | 0    | 0    | 0    | 20   | 0    |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 0    | 530  | 0    | 0    | 88   | 0    | 0    | 82   | 0    |
| Parking (#/hr)                    |      |      |       | 0    | 0    | 0    | 0    | 0    |      |      | 0    | 0    |
| Turn Type                         |      |      |       |      | Perm |      |      | Perm |      |      |      |      |
| Protected Phases                  |      |      |       |      |      | 8    |      | 2    |      |      | 6    |      |
| Permitted Phases                  |      |      |       |      | 8    |      | 2    |      |      |      |      |      |
| Actuated Green, G (s)             |      |      |       |      | 23.0 |      |      | 21.0 |      |      | 21.0 |      |
| Effective Green, g (s)            |      |      |       |      | 22.0 |      |      | 20.0 |      |      | 20.0 |      |
| Actuated g/C Ratio                |      |      |       |      | 0.44 |      |      | 0.40 |      |      | 0.40 |      |
| Clearance Time (s)                |      |      |       |      | 3.0  |      |      | 3.0  |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |      |      |       |      | 1465 |      |      | 615  |      |      | 641  |      |
| v/s Ratio Prot                    |      |      |       |      |      |      |      |      |      |      | 0.05 |      |
| v/s Ratio Perm                    |      |      |       |      | 0.16 |      |      | 0.06 |      |      |      |      |
| v/c Ratio                         |      |      |       |      | 0.36 |      |      | 0.14 |      |      | 0.13 |      |
| Uniform Delay, d1                 |      |      |       |      | 9.3  |      |      | 9.5  |      |      | 9.5  |      |
| Progression Factor                |      |      |       |      | 1.00 |      |      | 0.73 |      |      | 1.00 |      |
| Incremental Delay, d2             |      |      |       |      | 0.7  |      |      | 0.5  |      |      | 0.4  |      |
| Delay (s)                         |      |      |       |      | 10.0 |      |      | 7.5  |      |      | 9.9  |      |
| Level of Service                  |      |      |       |      | B    |      |      | A    |      |      | A    |      |
| Approach Delay (s)                |      | 0.0  |       |      | 10.0 |      |      | 7.5  |      |      | 9.9  |      |
| Approach LOS                      |      | A    |       |      | B    |      |      | A    |      |      | A    |      |
| <b>Intersection Summary</b>       |      |      |       |      |      |      |      |      |      |      |      |      |
| HCM Average Control Delay         |      |      | 9.7   |      |      |      |      |      |      |      |      |      |
| HCM Volume to Capacity ratio      |      |      | 0.26  |      |      |      |      |      |      |      |      |      |
| Actuated Cycle Length (s)         |      |      | 50.0  |      |      |      |      |      |      |      |      |      |
| Intersection Capacity Utilization |      |      | 33.1% |      |      |      |      |      |      |      |      |      |
| Analysis Period (min)             |      |      | 15    |      |      |      |      |      |      |      |      |      |
| c Critical Lane Group             |      |      |       |      |      |      |      |      |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
 3428: J Street & 29th St off ramp

7/11/2005



| Movement               | EBT   | EBR  | SBL   | SBT   | SWL2 | SWL  |
|------------------------|-------|------|-------|-------|------|------|
| Lane Configurations    | ↑↑↓   |      |       | ↑↑↑   |      | ↘↘   |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900  | 1900  | 1900 | 1900 |
| Total Lost time (s)    | 4.0   |      |       | 4.0   |      | 4.0  |
| Lane Util. Factor      | 0.91  |      |       | 0.91  |      | 0.97 |
| Frt                    | 0.97  |      |       | 1.00  |      | 1.00 |
| Flt Protected          | 1.00  |      |       | 0.99  |      | 0.95 |
| Satd. Flow (prot)      | 4754  |      |       | 4875  |      | 3433 |
| Flt Permitted          | 1.00  |      |       | 0.99  |      | 0.95 |
| Satd. Flow (perm)      | 4754  |      |       | 4875  |      | 3433 |
| Volume (vph)           | 1163  | 326  | 80    | 398   | 80   | 400  |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 1163  | 326  | 80    | 398   | 80   | 400  |
| RTOR Reduction (vph)   | 68    | 0    | 0     | 0     | 0    | 25   |
| Lane Group Flow (vph)  | 1421  | 0    | 0     | 478   | 0    | 455  |
| Parking (#/hr)         | 0     | 0    |       | 0     |      |      |
| Turn Type              |       |      | Split |       | Perm |      |
| Protected Phases       | 2     |      | 8     | 8     |      | 4    |
| Permitted Phases       |       |      |       |       | 4    |      |
| Actuated Green, G (s)  | 27.0  |      |       | 17.0  |      | 17.0 |
| Effective Green, g (s) | 26.0  |      |       | 16.0  |      | 16.0 |
| Actuated g/C Ratio     | 0.37  |      |       | 0.23  |      | 0.23 |
| Clearance Time (s)     | 3.0   |      |       | 3.0   |      | 3.0  |
| Lane Grp Cap (vph)     | 1766  |      |       | 1114  |      | 785  |
| v/s Ratio Prot         | c0.30 |      |       | c0.10 |      |      |
| v/s Ratio Perm         |       |      |       |       |      | 0.13 |
| v/c Ratio              | 0.80  |      |       | 0.43  |      | 0.58 |
| Uniform Delay, d1      | 19.7  |      |       | 23.1  |      | 24.0 |
| Progression Factor     | 0.42  |      |       | 1.00  |      | 1.00 |
| Incremental Delay, d2  | 3.0   |      |       | 1.2   |      | 3.1  |
| Delay (s)              | 11.3  |      |       | 24.3  |      | 27.1 |
| Level of Service       | B     |      |       | C     |      | C    |
| Approach Delay (s)     | 11.3  |      |       | 24.3  |      | 27.1 |
| Approach LOS           | B     |      |       | C     |      | C    |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 17.0  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.64  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 62.8% | ICU Level of Service | B    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3429: J Street & Alhambra

7/11/2005



| Movement               | EBL   | EBT   | EBR  | WBL   | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|-------|-------|------|-------|------|------|------|------|------|------|-------|------|
| Lane Configurations    | ↘     | ↕     |      | ↙     | ↕    | ↗    |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0   | 4.0   |      | 4.0   | 4.0  | 4.0  |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor      | 1.00  | 0.95  |      | 0.95  | 0.95 | 1.00 |      | 0.95 |      |      | 0.95  |      |
| Frt                    | 1.00  | 0.96  |      | 1.00  | 1.00 | 0.85 |      | 0.94 |      |      | 1.00  |      |
| Flt Protected          | 0.95  | 1.00  |      | 0.95  | 0.95 | 1.00 |      | 1.00 |      |      | 0.99  |      |
| Satd. Flow (prot)      | 1770  | 3243  |      | 1681  | 1681 | 1425 |      | 3164 |      |      | 3341  |      |
| Flt Permitted          | 0.95  | 1.00  |      | 0.95  | 0.95 | 1.00 |      | 1.00 |      |      | 0.81  |      |
| Satd. Flow (perm)      | 1770  | 3243  |      | 1681  | 1681 | 1425 |      | 3164 |      |      | 2713  |      |
| Volume (vph)           | 158   | 786   | 244  | 508   | 0    | 206  | 0    | 286  | 186  | 52   | 366   | 0    |
| Peak-hour factor, PHF  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 158   | 786   | 244  | 508   | 0    | 206  | 0    | 286  | 186  | 52   | 366   | 0    |
| RTOR Reduction (vph)   | 0     | 42    | 0    | 0     | 0    | 159  | 0    | 143  | 0    | 0    | 0     | 0    |
| Lane Group Flow (vph)  | 158   | 988   | 0    | 254   | 254  | 47   | 0    | 329  | 0    | 0    | 418   | 0    |
| Parking (#/hr)         |       | 0     | 0    |       |      | 0    |      | 0    | 0    |      | 0     |      |
| Turn Type              | Split |       |      | Split |      |      | Perm |      |      |      | Perm  |      |
| Protected Phases       | 2     | 2     |      | 6     | 6    |      | 8    |      |      |      | 4     |      |
| Permitted Phases       |       |       |      |       |      | 6    |      |      |      | 4    |       |      |
| Actuated Green, G (s)  | 27.0  | 27.0  |      | 17.0  | 17.0 | 17.0 |      | 17.0 |      |      | 17.0  |      |
| Effective Green, g (s) | 26.0  | 26.0  |      | 16.0  | 16.0 | 16.0 |      | 16.0 |      |      | 16.0  |      |
| Actuated g/C Ratio     | 0.37  | 0.37  |      | 0.23  | 0.23 | 0.23 |      | 0.23 |      |      | 0.23  |      |
| Clearance Time (s)     | 3.0   | 3.0   |      | 3.0   | 3.0  | 3.0  |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)     | 657   | 1205  |      | 384   | 384  | 326  |      | 723  |      |      | 620   |      |
| v/s Ratio Prot         | 0.09  | c0.30 |      | c0.15 | 0.15 |      |      | 0.10 |      |      |       |      |
| v/s Ratio Perm         |       |       |      |       |      | 0.03 |      |      |      |      | c0.15 |      |
| v/c Ratio              | 0.24  | 0.82  |      | 0.66  | 0.66 | 0.14 |      | 0.45 |      |      | 0.67  |      |
| Uniform Delay, d1      | 15.2  | 19.9  |      | 24.5  | 24.5 | 21.5 |      | 23.2 |      |      | 24.6  |      |
| Progression Factor     | 0.42  | 0.46  |      | 1.00  | 1.00 | 1.00 |      | 0.64 |      |      | 1.00  |      |
| Incremental Delay, d2  | 0.8   | 5.6   |      | 8.7   | 8.7  | 0.9  |      | 1.9  |      |      | 5.8   |      |
| Delay (s)              | 7.2   | 14.8  |      | 33.2  | 33.2 | 22.5 |      | 16.7 |      |      | 30.4  |      |
| Level of Service       | A     | B     |      | C     | C    | C    |      | B    |      |      | C     |      |
| Approach Delay (s)     |       | 13.8  |      |       | 30.1 |      |      | 16.7 |      |      | 30.4  |      |
| Approach LOS           |       | B     |      |       | C    |      |      | B    |      |      | C     |      |

**Intersection Summary**

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 20.9  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.74  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 82.4% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3435: N Street & 29th Street

7/11/2005



| Movement                          | EBT   | EBR  | EBR2 | WBL2  | WBL   | WBT   | SBL2 | SBL   | SBT  | SBR  |
|-----------------------------------|-------|------|------|-------|-------|-------|------|-------|------|------|
| Lane Configurations               | ↑     | ↔    |      |       | ↔     | ↔     |      | ↔     | ↔    |      |
| Ideal Flow (vphpl)                | 1900  | 1900 | 1900 | 1900  | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)               | 4.0   | 4.0  |      |       | 4.0   | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor                 | 1.00  | 1.00 |      |       | 0.95  | 0.95  |      | 0.97  | 0.95 |      |
| Fr <sub>t</sub>                   | 1.00  | 0.85 |      |       | 1.00  | 1.00  |      | 1.00  | 1.00 |      |
| Fl <sub>t</sub> Protected         | 1.00  | 1.00 |      |       | 0.95  | 0.97  |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)                 | 1676  | 1425 |      |       | 1681  | 1719  |      | 3433  | 3352 |      |
| Fl <sub>t</sub> Permitted         | 1.00  | 1.00 |      |       | 0.95  | 0.97  |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)                 | 1676  | 1425 |      |       | 1681  | 1719  |      | 3433  | 3352 |      |
| Volume (vph)                      | 395   | 239  | 51   | 128   | 168   | 79    | 12   | 971   | 515  | 11   |
| Peak-hour factor, PHF             | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 395   | 239  | 51   | 128   | 168   | 79    | 12   | 971   | 515  | 11   |
| RTOR Reduction (vph)              | 0     | 11   | 0    | 0     | 0     | 0     | 0    | 0     | 2    | 0    |
| Lane Group Flow (vph)             | 395   | 279  | 0    | 0     | 183   | 192   | 0    | 983   | 524  | 0    |
| Parking (#/hr)                    | 0     | 0    | 0    |       |       |       |      |       | 0    |      |
| Turn Type                         |       | Perm |      | Split | Split |       | Perm | Perm  |      |      |
| Protected Phases                  | 4     |      |      | 8     | 8     | 8     |      |       | 6    |      |
| Permitted Phases                  |       | 4    |      |       |       |       | 6    | 6     |      |      |
| Actuated Green, G (s)             | 23.0  | 23.0 |      |       | 12.0  | 12.0  |      | 26.0  | 26.0 |      |
| Effective Green, g (s)            | 22.0  | 22.0 |      |       | 11.0  | 11.0  |      | 25.0  | 25.0 |      |
| Actuated g/C Ratio                | 0.31  | 0.31 |      |       | 0.16  | 0.16  |      | 0.36  | 0.36 |      |
| Clearance Time (s)                | 3.0   | 3.0  |      |       | 3.0   | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)                | 527   | 448  |      |       | 264   | 270   |      | 1226  | 1197 |      |
| v/s Ratio Prot                    | c0.24 |      |      |       | 0.11  | c0.11 |      |       | 0.16 |      |
| v/s Ratio Perm                    |       | 0.20 |      |       |       |       |      | c0.29 |      |      |
| v/c Ratio                         | 0.75  | 0.62 |      |       | 0.69  | 0.71  |      | 0.80  | 0.44 |      |
| Uniform Delay, d <sub>1</sub>     | 21.5  | 20.5 |      |       | 27.9  | 28.0  |      | 20.3  | 17.1 |      |
| Progression Factor                | 0.72  | 0.69 |      |       | 0.74  | 0.85  |      | 0.81  | 0.76 |      |
| Incremental Delay, d <sub>2</sub> | 8.4   | 5.7  |      |       | 12.9  | 13.2  |      | 4.2   | 0.9  |      |
| Delay (s)                         | 23.9  | 19.8 |      |       | 33.5  | 37.0  |      | 20.6  | 13.9 |      |
| Level of Service                  | C     | B    |      |       | C     | D     |      | C     | B    |      |
| Approach Delay (s)                | 22.2  |      |      |       |       | 35.3  |      |       | 18.3 |      |
| Approach LOS                      | C     |      |      |       |       | D     |      |       | B    |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 21.8  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.76  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 69.1% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3436: Capitol & Alhambra

7/11/2005

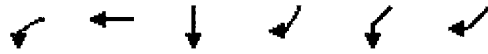


| Movement                  | EBL   | EBT  | EBR   | WBL  | WBT  | WBR  | NBL   | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------------|-------|------|-------|------|------|------|-------|------|------|------|------|------|
| Lane Configurations       |       | ↔    |       |      | ↔    |      | ↗     | ↖    | ↗    | ↖    | ↖    | ↗    |
| Ideal Flow (vphpl)        | 1900  | 1900 | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |       | 4.0  |       |      | 4.0  |      | 4.0   | 4.0  | 4.0  | 4.0  | 4.0  | 4.0  |
| Lane Util. Factor         |       | 0.95 |       |      | 0.95 |      | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fr <sub>t</sub>           |       | 0.98 |       |      | 0.98 |      | 1.00  | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Fl <sub>t</sub> Protected |       | 0.99 |       |      | 1.00 |      | 0.95  | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot)         |       | 3286 |       |      | 3283 |      | 1593  | 1676 | 1425 | 1593 | 1676 | 1425 |
| Fl <sub>t</sub> Permitted |       | 0.99 |       |      | 1.00 |      | 0.29  | 1.00 | 1.00 | 0.23 | 1.00 | 1.00 |
| Satd. Flow (perm)         |       | 3286 |       |      | 3283 |      | 491   | 1676 | 1425 | 388  | 1676 | 1425 |
| Volume (vph)              | 58    | 374  | 55    | 49   | 577  | 98   | 53    | 494  | 85   | 108  | 440  | 83   |
| Peak-hour factor, PHF     | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 58    | 374  | 55    | 49   | 577  | 98   | 53    | 494  | 85   | 108  | 440  | 83   |
| RTOR Reduction (vph)      | 0     | 14   | 0     | 0    | 18   | 0    | 0     | 0    | 44   | 0    | 0    | 48   |
| Lane Group Flow (vph)     | 0     | 473  | 0     | 0    | 706  | 0    | 53    | 494  | 41   | 108  | 440  | 35   |
| Parking (#/hr)            | 0     | 0    | 0     | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    | 0    |
| Turn Type                 | Split |      | Split |      |      |      | Perm  |      | Perm | Perm | Perm |      |
| Protected Phases          | 4     | 4    | 8     |      |      |      | 8     |      | 2    | 6    |      | 6    |
| Permitted Phases          |       |      |       |      |      |      | 2     | 2    |      | 6    | 6    |      |
| Actuated Green, G (s)     | 17.0  |      | 18.0  |      |      |      | 26.0  | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 |
| Effective Green, g (s)    | 16.0  |      | 17.0  |      |      |      | 25.0  | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| Actuated g/C Ratio        | 0.23  |      | 0.24  |      |      |      | 0.36  | 0.36 | 0.36 | 0.36 | 0.36 | 0.36 |
| Clearance Time (s)        | 3.0   |      | 3.0   |      |      |      | 3.0   | 3.0  | 3.0  | 3.0  | 3.0  | 3.0  |
| Lane Grp Cap (vph)        | 751   |      | 797   |      |      |      | 175   | 599  | 509  | 139  | 599  | 509  |
| v/s Ratio Prot            | c0.14 |      | c0.22 |      |      |      | c0.29 |      |      |      | 0.26 |      |
| v/s Ratio Perm            |       |      |       |      |      |      | 0.11  | 0.03 |      | 0.28 | 0.02 |      |
| v/c Ratio                 | 0.63  |      | 0.89  |      |      |      | 0.30  | 0.82 | 0.08 | 0.78 | 0.73 | 0.07 |
| Uniform Delay, d1         | 24.3  |      | 25.6  |      |      |      | 16.2  | 20.5 | 14.9 | 20.0 | 19.6 | 14.8 |
| Progression Factor        | 0.90  |      | 1.00  |      |      |      | 0.73  | 0.65 | 0.65 | 0.88 | 0.89 | 1.31 |
| Incremental Delay, d2     | 3.9   |      | 13.8  |      |      |      | 3.1   | 8.9  | 0.2  | 27.6 | 6.2  | 0.2  |
| Delay (s)                 | 25.8  |      | 39.4  |      |      |      | 14.9  | 22.1 | 9.8  | 45.2 | 23.6 | 19.6 |
| Level of Service          | C     |      | D     |      |      |      | B     | C    | A    | D    | C    | B    |
| Approach Delay (s)        | 25.8  |      | 39.4  |      |      |      | 19.9  |      |      |      | 26.8 |      |
| Approach LOS              | C     |      | D     |      |      |      | B     |      |      |      | C    |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 28.5  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.79  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 79.6% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3437: P Street & 29th St off ramp

7/11/2005



| Movement                          | WBL  | WBT   | SBT   | SBR  | SWL                  | SWR  |
|-----------------------------------|------|-------|-------|------|----------------------|------|
| Lane Configurations               |      |       |       |      |                      |      |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900  | 1900 | 1900                 | 1900 |
| Total Lost time (s)               | 4.0  | 4.0   | 4.0   |      | 4.0                  | 4.0  |
| Lane Util. Factor                 | 1.00 | 0.95  | 0.91  |      | 0.97                 | 0.91 |
| Frt                               | 1.00 | 1.00  | 0.97  |      | 0.99                 | 0.85 |
| Flt Protected                     | 0.95 | 1.00  | 1.00  |      | 0.96                 | 1.00 |
| Satd. Flow (prot)                 | 1593 | 3362  | 4784  |      | 3412                 | 1441 |
| Flt Permitted                     | 0.95 | 1.00  | 1.00  |      | 0.96                 | 1.00 |
| Satd. Flow (perm)                 | 1593 | 3362  | 4784  |      | 3412                 | 1441 |
| Volume (vph)                      | 157  | 670   | 545   | 119  | 330                  | 181  |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00  | 1.00 | 1.00                 | 1.00 |
| Adj. Flow (vph)                   | 157  | 670   | 545   | 119  | 330                  | 181  |
| RTOR Reduction (vph)              | 88   | 0     | 49    | 0    | 0                    | 0    |
| Lane Group Flow (vph)             | 69   | 670   | 615   | 0    | 360                  | 151  |
| Parking (#/hr)                    | 0    | 0     | 0     | 0    |                      |      |
| Turn Type                         | Perm |       |       |      |                      | Perm |
| Protected Phases                  |      | 6     | 7     |      | 8                    |      |
| Permitted Phases                  | 6    |       |       |      |                      | 8    |
| Actuated Green, G (s)             | 24.0 | 24.0  | 18.0  |      | 19.0                 | 19.0 |
| Effective Green, g (s)            | 23.0 | 23.0  | 17.0  |      | 18.0                 | 18.0 |
| Actuated g/C Ratio                | 0.33 | 0.33  | 0.24  |      | 0.26                 | 0.26 |
| Clearance Time (s)                | 3.0  | 3.0   | 3.0   |      | 3.0                  | 3.0  |
| Lane Grp Cap (vph)                | 523  | 1105  | 1162  |      | 877                  | 371  |
| v/s Ratio Prot                    |      | c0.20 | c0.13 |      | c0.11                |      |
| v/s Ratio Perm                    | 0.04 |       |       |      |                      | 0.10 |
| v/c Ratio                         | 0.13 | 0.61  | 0.53  |      | 0.41                 | 0.41 |
| Uniform Delay, d1                 | 16.5 | 19.7  | 23.0  |      | 21.6                 | 21.6 |
| Progression Factor                | 0.05 | 0.33  | 0.63  |      | 1.00                 | 1.00 |
| Incremental Delay, d2             | 0.4  | 2.0   | 1.5   |      | 1.4                  | 3.3  |
| Delay (s)                         | 1.2  | 8.6   | 16.1  |      | 23.0                 | 24.9 |
| Level of Service                  | A    | A     | B     |      | C                    | C    |
| Approach Delay (s)                |      | 7.2   | 16.1  |      | 23.6                 |      |
| Approach LOS                      |      | A     | B     |      | C                    |      |
| <b>Intersection Summary</b>       |      |       |       |      |                      |      |
| HCM Average Control Delay         |      |       | 14.3  |      | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      |      |       | 0.52  |      |                      |      |
| Actuated Cycle Length (s)         |      |       | 70.0  |      | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization |      |       | 53.0% |      | ICU Level of Service | A    |
| Analysis Period (min)             |      |       | 15    |      |                      |      |
| c Critical Lane Group             |      |       |       |      |                      |      |



HCM Signalized Intersection Capacity Analysis  
 3438: P Street & Alhambra

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL   | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|-------|------|-------|------|------|
| Lane Configurations    |      |      |      |      | ↕↕↕  |      | ↕    | ↕     |      | ↕     | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      | 4.0  | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor      |      |      |      |      | 0.91 |      | 1.00 | 1.00  |      | 1.00  | 1.00 |      |
| Frt                    |      |      |      |      | 0.97 |      | 1.00 | 0.94  |      | 1.00  | 0.97 |      |
| Flt Protected          |      |      |      |      | 1.00 |      | 0.95 | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)      |      |      |      |      | 4930 |      | 1770 | 1756  |      | 1770  | 1813 |      |
| Flt Permitted          |      |      |      |      | 1.00 |      | 0.95 | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)      |      |      |      |      | 4930 |      | 1770 | 1756  |      | 1770  | 1813 |      |
| Volume (vph)           | 0    | 0    | 0    | 75   | 771  | 185  | 159  | 392   | 241  | 224   | 413  | 89   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 75   | 771  | 185  | 159  | 392   | 241  | 224   | 413  | 89   |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 49   | 0    | 0    | 32    | 0    | 0     | 11   | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 982  | 0    | 159  | 601   | 0    | 224   | 491  | 0    |
| Turn Type              |      |      |      | Perm |      |      | Prot |       |      | Prot  |      |      |
| Protected Phases       |      |      |      |      | 6    |      | 3    | 8     |      | 7     | 4    |      |
| Permitted Phases       |      |      |      | 6    |      |      |      |       |      |       |      |      |
| Actuated Green, G (s)  |      |      |      |      | 18.0 |      | 10.0 | 30.0  |      | 13.0  | 33.0 |      |
| Effective Green, g (s) |      |      |      |      | 17.0 |      | 9.0  | 29.0  |      | 12.0  | 32.0 |      |
| Actuated g/C Ratio     |      |      |      |      | 0.24 |      | 0.13 | 0.41  |      | 0.17  | 0.46 |      |
| Clearance Time (s)     |      |      |      |      | 3.0  |      | 3.0  | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     |      |      |      |      | 1197 |      | 228  | 727   |      | 303   | 829  |      |
| v/s Ratio Prot         |      |      |      |      |      |      | 0.09 | c0.34 |      | c0.13 | 0.27 |      |
| v/s Ratio Perm         |      |      |      |      | 0.20 |      |      |       |      |       |      |      |
| v/c Ratio              |      |      |      |      | 0.82 |      | 0.70 | 0.83  |      | 0.74  | 0.59 |      |
| Uniform Delay, d1      |      |      |      |      | 25.1 |      | 29.2 | 18.3  |      | 27.5  | 14.1 |      |
| Progression Factor     |      |      |      |      | 1.00 |      | 1.00 | 1.00  |      | 1.08  | 0.58 |      |
| Incremental Delay, d2  |      |      |      |      | 6.4  |      | 16.3 | 10.4  |      | 10.0  | 2.0  |      |
| Delay (s)              |      |      |      |      | 31.4 |      | 45.4 | 28.7  |      | 39.8  | 10.2 |      |
| Level of Service       |      |      |      |      | C    |      | D    | C     |      | D     | B    |      |
| Approach Delay (s)     |      | 0.0  |      |      | 31.4 |      |      | 32.1  |      |       | 19.3 |      |
| Approach LOS           |      | A    |      |      | C    |      |      | C     |      |       | B    |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 28.2  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.81  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 78.3% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 3444: Q Street & 29th Street

7/11/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|-------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑↓    |      |      |      |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      |      |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 0.95  |      |      |      |      |      |      |      |      | 0.91 |      |
| Frt                    |      | 0.97  |      |      |      |      |      |      |      |      | 1.00 |      |
| Flt Protected          |      | 1.00  |      |      |      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (prot)      |      | 3441  |      |      |      |      |      |      |      |      | 5045 |      |
| Flt Permitted          |      | 1.00  |      |      |      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (perm)      |      | 3441  |      |      |      |      |      |      |      |      | 5045 |      |
| Volume (vph)           | 0    | 607   | 138  | 0    | 0    | 0    | 0    | 0    | 0    | 169  | 888  | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 607   | 138  | 0    | 0    | 0    | 0    | 0    | 0    | 169  | 888  | 0    |
| RTOR Reduction (vph)   | 0    | 28    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 40   | 0    |
| Lane Group Flow (vph)  | 0    | 717   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1017 | 0    |
| Turn Type              |      |       |      |      |      |      |      |      |      |      | Perm |      |
| Protected Phases       |      | 2     |      |      |      |      |      |      |      |      |      | 4    |
| Permitted Phases       |      |       |      |      |      |      |      |      |      |      | 4    |      |
| Actuated Green, G (s)  |      | 34.0  |      |      |      |      |      |      |      |      | 30.0 |      |
| Effective Green, g (s) |      | 33.0  |      |      |      |      |      |      |      |      | 29.0 |      |
| Actuated g/C Ratio     |      | 0.47  |      |      |      |      |      |      |      |      | 0.41 |      |
| Clearance Time (s)     |      | 3.0   |      |      |      |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 1622  |      |      |      |      |      |      |      |      | 2090 |      |
| v/s Ratio Prot         |      | c0.21 |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |       |      |      |      |      |      |      |      |      | 0.20 |      |
| v/c Ratio              |      | 0.44  |      |      |      |      |      |      |      |      | 0.49 |      |
| Uniform Delay, d1      |      | 12.4  |      |      |      |      |      |      |      |      | 15.0 |      |
| Progression Factor     |      | 1.00  |      |      |      |      |      |      |      |      | 0.38 |      |
| Incremental Delay, d2  |      | 0.9   |      |      |      |      |      |      |      |      | 0.7  |      |
| Delay (s)              |      | 13.2  |      |      |      |      |      |      |      |      | 6.5  |      |
| Level of Service       |      | B     |      |      |      |      |      |      |      |      | A    |      |
| Approach Delay (s)     |      | 13.2  |      |      | 0.0  |      |      | 0.0  |      |      | 6.5  |      |
| Approach LOS           |      | B     |      |      | A    |      |      | A    |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 9.3   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.46  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 48.4% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 3467: N Street & Alhambra

7/11/2005



| Movement                          | EBL  | EBT   | EBR  | WBL  | WBT                  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|-----------------------------------|------|-------|------|------|----------------------|------|------|------|------|------|-------|------|
| Lane Configurations               |      | ↔     |      |      | ↔                    |      |      | ↔    |      |      | ↔     |      |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)               |      | 4.0   |      |      | 4.0                  |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor                 |      | 1.00  |      |      | 1.00                 |      |      | 1.00 |      |      | 1.00  |      |
| Frt                               |      | 0.97  |      |      | 0.99                 |      |      | 0.99 |      |      | 0.99  |      |
| Flt Protected                     |      | 0.99  |      |      | 0.99                 |      |      | 1.00 |      |      | 1.00  |      |
| Satd. Flow (prot)                 |      | 1615  |      |      | 1643                 |      |      | 1651 |      |      | 1665  |      |
| Flt Permitted                     |      | 0.89  |      |      | 0.88                 |      |      | 0.97 |      |      | 0.99  |      |
| Satd. Flow (perm)                 |      | 1445  |      |      | 1455                 |      |      | 1611 |      |      | 1654  |      |
| Volume (vph)                      | 85   | 272   | 91   | 59   | 237                  | 26   | 21   | 500  | 57   | 9    | 579   | 27   |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00 | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)                   | 85   | 272   | 91   | 59   | 237                  | 26   | 21   | 500  | 57   | 9    | 579   | 27   |
| RTOR Reduction (vph)              | 0    | 13    | 0    | 0    | 5                    | 0    | 0    | 6    | 0    | 0    | 3     | 0    |
| Lane Group Flow (vph)             | 0    | 435   |      | 0    | 0                    | 317  | 0    | 0    | 572  | 0    | 0     | 612  |
| Parking (#/hr)                    | 0    | 0     | 0    | 0    | 0                    | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Turn Type                         | Perm |       |      | Perm |                      |      | Perm |      |      | Perm |       |      |
| Protected Phases                  |      | 4     |      |      | 8                    |      |      | 2    |      |      | 6     |      |
| Permitted Phases                  | 4    |       |      | 8    |                      |      | 2    |      |      | 6    |       |      |
| Actuated Green, G (s)             |      | 29.0  |      |      | 29.0                 |      |      | 35.0 |      |      | 35.0  |      |
| Effective Green, g (s)            |      | 28.0  |      |      | 28.0                 |      |      | 34.0 |      |      | 34.0  |      |
| Actuated g/C Ratio                |      | 0.40  |      |      | 0.40                 |      |      | 0.49 |      |      | 0.49  |      |
| Clearance Time (s)                |      | 3.0   |      |      | 3.0                  |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)                |      | 578   |      |      | 582                  |      |      | 782  |      |      | 803   |      |
| v/s Ratio Prot                    |      |       |      |      |                      |      |      |      |      |      |       |      |
| v/s Ratio Perm                    |      | c0.30 |      |      | 0.22                 |      |      | 0.36 |      |      | c0.37 |      |
| v/c Ratio                         |      | 0.75  |      |      | 0.55                 |      |      | 0.73 |      |      | 0.76  |      |
| Uniform Delay, d1                 |      | 18.0  |      |      | 16.1                 |      |      | 14.4 |      |      | 14.7  |      |
| Progression Factor                |      | 0.64  |      |      | 1.00                 |      |      | 0.63 |      |      | 0.77  |      |
| Incremental Delay, d2             |      | 7.6   |      |      | 3.6                  |      |      | 3.2  |      |      | 5.2   |      |
| Delay (s)                         |      | 19.1  |      |      | 19.8                 |      |      | 12.3 |      |      | 16.5  |      |
| Level of Service                  |      | B     |      |      | B                    |      |      | B    |      |      | B     |      |
| Approach Delay (s)                |      | 19.1  |      |      | 19.8                 |      |      | 12.3 |      |      | 16.5  |      |
| Approach LOS                      |      | B     |      |      | B                    |      |      | B    |      |      | B     |      |
| <b>Intersection Summary</b>       |      |       |      |      |                      |      |      |      |      |      |       |      |
| HCM Average Control Delay         |      | 16.4  |      |      | HCM Level of Service |      |      | B    |      |      |       |      |
| HCM Volume to Capacity ratio      |      | 0.76  |      |      |                      |      |      |      |      |      |       |      |
| Actuated Cycle Length (s)         |      | 70.0  |      |      | Sum of lost time (s) |      |      | 8.0  |      |      |       |      |
| Intersection Capacity Utilization |      | 81.9% |      |      | ICU Level of Service |      |      | D    |      |      |       |      |
| Analysis Period (min)             |      | 15    |      |      |                      |      |      |      |      |      |       |      |
| c Critical Lane Group             |      |       |      |      |                      |      |      |      |      |      |       |      |

HCM Signalized Intersection Capacity Analysis  
 5802: K Street & 29th Street

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑    | ↗    | ↖    | ↑     |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  | 4.0  | 4.0   |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00 | 1.00 | 1.00 | 1.00  |      |      |      |      |      | 0.91 |      |
| Frt                    |      | 1.00 | 0.85 | 1.00 | 1.00  |      |      |      |      |      | 0.97 |      |
| Flt Protected          |      | 1.00 | 1.00 | 0.95 | 1.00  |      |      |      |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 1863 | 1583 | 1770 | 1863  |      |      |      |      |      | 4932 |      |
| Flt Permitted          |      | 1.00 | 1.00 | 0.55 | 1.00  |      |      |      |      |      | 1.00 |      |
| Satd. Flow (perm)      |      | 1863 | 1583 | 1018 | 1863  |      |      |      |      |      | 4932 |      |
| Volume (vph)           | 0    | 271  | 133  | 208  | 430   | 0    | 0    | 0    | 0    | 86   | 891  | 211  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 271  | 133  | 208  | 430   | 0    | 0    | 0    | 0    | 86   | 891  | 211  |
| RTOR Reduction (vph)   | 0    | 0    | 33   | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 49   | 0    |
| Lane Group Flow (vph)  | 0    | 271  | 100  | 208  | 430   | 0    | 0    | 0    | 0    | 0    | 1139 | 0    |
| Turn Type              |      |      | Perm | Perm |       |      |      |      |      |      | Perm |      |
| Protected Phases       |      | 4    |      |      | 8     |      |      |      |      |      |      | 6    |
| Permitted Phases       |      |      | 4    | 8    |       |      |      |      |      | 6    |      |      |
| Actuated Green, G (s)  |      | 34.0 | 34.0 | 34.0 | 34.0  |      |      |      |      |      | 30.0 |      |
| Effective Green, g (s) |      | 33.0 | 33.0 | 33.0 | 33.0  |      |      |      |      |      | 29.0 |      |
| Actuated g/C Ratio     |      | 0.47 | 0.47 | 0.47 | 0.47  |      |      |      |      |      | 0.41 |      |
| Clearance Time (s)     |      | 3.0  | 3.0  | 3.0  | 3.0   |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 878  | 746  | 480  | 878   |      |      |      |      |      | 2043 |      |
| v/s Ratio Prot         |      | 0.15 |      |      | c0.23 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      | 0.06 | 0.20 |       |      |      |      |      |      | 0.23 |      |
| v/c Ratio              |      | 0.31 | 0.13 | 0.43 | 0.49  |      |      |      |      |      | 0.56 |      |
| Uniform Delay, d1      |      | 11.4 | 10.4 | 12.3 | 12.7  |      |      |      |      |      | 15.6 |      |
| Progression Factor     |      | 0.70 | 0.49 | 0.91 | 0.92  |      |      |      |      |      | 0.70 |      |
| Incremental Delay, d2  |      | 0.9  | 0.4  | 2.5  | 1.7   |      |      |      |      |      | 0.9  |      |
| Delay (s)              |      | 8.9  | 5.5  | 13.7 | 13.5  |      |      |      |      |      | 11.8 |      |
| Level of Service       |      | A    | A    | B    | B     |      |      |      |      |      | B    |      |
| Approach Delay (s)     |      | 7.7  |      |      | 13.5  |      |      | 0.0  |      |      | 11.8 |      |
| Approach LOS           |      | A    |      |      | B     |      |      | A    |      |      | B    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.6  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.52  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 59.5% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 5848: J Street & 30th Street

7/11/2005



| Movement                          | EBL2 | EBL  | EBT   | WBR2 | NBL                  | NBT  | NBR  |
|-----------------------------------|------|------|-------|------|----------------------|------|------|
| Lane Configurations               |      | ↘    | ↕     | ↗    | ↘                    | ↕    | ↗    |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900                 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0  | 4.0   |      | 4.0                  | 4.0  |      |
| Lane Util. Factor                 |      | 0.86 | 0.86  |      | 0.91                 | 0.91 |      |
| Frt                               |      | 1.00 | 1.00  |      | 1.00                 | 0.96 |      |
| Flt Protected                     |      | 0.95 | 1.00  |      | 0.95                 | 0.99 |      |
| Satd. Flow (prot)                 |      | 1522 | 4640  |      | 1610                 | 3221 |      |
| Flt Permitted                     |      | 0.95 | 1.00  |      | 0.95                 | 0.99 |      |
| Satd. Flow (perm)                 |      | 1522 | 4640  |      | 1610                 | 3221 |      |
| Volume (vph)                      | 201  | 211  | 1066  | 0    | 382                  | 313  | 159  |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00                 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 201  | 211  | 1066  | 0    | 382                  | 313  | 159  |
| RTOR Reduction (vph)              | 0    | 56   | 0     | 0    | 0                    | 31   | 0    |
| Lane Group Flow (vph)             | 0    | 330  | 1092  | 0    | 280                  | 543  | 0    |
| Parking (#/hr)                    |      |      | 0     | 0    |                      |      | 0    |
| Turn Type                         | Perm | Perm |       | Free | Perm                 |      |      |
| Protected Phases                  |      |      | 2     |      |                      | 8    |      |
| Permitted Phases                  | 2    | 2    |       | Free | 8                    |      |      |
| Actuated Green, G (s)             |      | 34.0 | 34.0  |      | 30.0                 | 30.0 |      |
| Effective Green, g (s)            |      | 33.0 | 33.0  |      | 29.0                 | 29.0 |      |
| Actuated g/C Ratio                |      | 0.47 | 0.47  |      | 0.41                 | 0.41 |      |
| Clearance Time (s)                |      | 3.0  | 3.0   |      | 3.0                  | 3.0  |      |
| Lane Grp Cap (vph)                |      | 718  | 2187  |      | 667                  | 1334 |      |
| v/s Ratio Prot                    |      |      |       |      |                      |      |      |
| v/s Ratio Perm                    |      | 0.22 | 0.24  |      | 0.17                 | 0.17 |      |
| v/c Ratio                         |      | 0.46 | 0.50  |      | 0.42                 | 0.41 |      |
| Uniform Delay, d1                 |      | 12.5 | 12.8  |      | 14.5                 | 14.4 |      |
| Progression Factor                |      | 0.13 | 0.30  |      | 0.57                 | 0.50 |      |
| Incremental Delay, d2             |      | 1.5  | 0.6   |      | 1.7                  | 0.8  |      |
| Delay (s)                         |      | 3.1  | 4.4   |      | 10.0                 | 8.1  |      |
| Level of Service                  |      | A    | A     |      | A                    | A    |      |
| Approach Delay (s)                |      |      | 4.1   |      |                      | 8.7  |      |
| Approach LOS                      |      |      | A     |      |                      | A    |      |
| <b>Intersection Summary</b>       |      |      |       |      |                      |      |      |
| HCM Average Control Delay         |      |      | 5.8   |      | HCM Level of Service |      | A    |
| HCM Volume to Capacity ratio      |      |      | 0.46  |      |                      |      |      |
| Actuated Cycle Length (s)         |      |      | 70.0  |      | Sum of lost time (s) |      | 8.0  |
| Intersection Capacity Utilization |      |      | 44.9% |      | ICU Level of Service |      | A    |
| Analysis Period (min)             |      |      | 15    |      |                      |      |      |
| c Critical Lane Group             |      |      |       |      |                      |      |      |

# HCM Signalized Intersection Capacity Analysis

5849: L Street & 30th Street

7/11/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT   | WBR  | NBL                  | NBT   | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|-------|------|-------|------|----------------------|-------|------|------|------|------|
| Lane Configurations               |      |      |       |      | ↑↑↑   |      | ↑                    | ↑↑↑   |      |      |      |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 | 1900                 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      |      |       |      | 4.0   |      | 4.0                  | 4.0   |      |      |      |      |
| Lane Util. Factor                 |      |      |       |      | 0.91  |      | 0.86                 | 0.86  |      |      |      |      |
| Fr <sub>t</sub>                   |      |      |       |      | 0.98  |      | 1.00                 | 1.00  |      |      |      |      |
| Fl <sub>t</sub> Protected         |      |      |       |      | 1.00  |      | 0.95                 | 1.00  |      |      |      |      |
| Satd. Flow (prot)                 |      |      |       |      | 4979  |      | 1522                 | 4646  |      |      |      |      |
| Fl <sub>t</sub> Permitted         |      |      |       |      | 1.00  |      | 0.95                 | 1.00  |      |      |      |      |
| Satd. Flow (perm)                 |      |      |       |      | 4979  |      | 1522                 | 4646  |      |      |      |      |
| Volume (vph)                      | 0    | 0    | 0     | 0    | 444   | 72   | 175                  | 1264  | 0    | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00                 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 0    | 444   | 72   | 175                  | 1264  | 0    | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 0    | 22    | 0    | 88                   | 0     | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 0    | 494   | 0    | 88                   | 1264  | 0    | 0    | 0    | 0    |
| Parking (#/hr)                    |      |      |       |      |       | 0    |                      | 0     |      |      |      |      |
| Turn Type                         |      |      |       |      |       |      | Perm                 |       |      |      |      |      |
| Protected Phases                  |      |      |       |      | 6     |      |                      | 8     |      |      |      |      |
| Permitted Phases                  |      |      |       |      |       |      | 8                    |       |      |      |      |      |
| Actuated Green, G (s)             |      |      |       |      | 28.0  |      | 36.0                 | 36.0  |      |      |      |      |
| Effective Green, g (s)            |      |      |       |      | 27.0  |      | 35.0                 | 35.0  |      |      |      |      |
| Actuated g/C Ratio                |      |      |       |      | 0.39  |      | 0.50                 | 0.50  |      |      |      |      |
| Clearance Time (s)                |      |      |       |      | 3.0   |      | 3.0                  | 3.0   |      |      |      |      |
| Lane Grp Cap (vph)                |      |      |       |      | 1920  |      | 761                  | 2323  |      |      |      |      |
| v/s Ratio Prot                    |      |      |       |      | c0.10 |      |                      | c0.27 |      |      |      |      |
| v/s Ratio Perm                    |      |      |       |      |       |      | 0.06                 |       |      |      |      |      |
| v/c Ratio                         |      |      |       |      | 0.26  |      | 0.11                 | 0.54  |      |      |      |      |
| Uniform Delay, d1                 |      |      |       |      | 14.7  |      | 9.3                  | 12.0  |      |      |      |      |
| Progression Factor                |      |      |       |      | 1.10  |      | 0.02                 | 0.52  |      |      |      |      |
| Incremental Delay, d2             |      |      |       |      | 0.3   |      | 0.3                  | 0.9   |      |      |      |      |
| Delay (s)                         |      |      |       |      | 16.5  |      | 0.5                  | 7.2   |      |      |      |      |
| Level of Service                  |      |      |       |      | B     |      | A                    | A     |      |      |      |      |
| Approach Delay (s)                |      | 0.0  |       |      | 16.5  |      |                      | 6.4   |      |      | 0.0  |      |
| Approach LOS                      |      | A    |       |      | B     |      |                      | A     |      |      | A    |      |
| <b>Intersection Summary</b>       |      |      |       |      |       |      |                      |       |      |      |      |      |
| HCM Average Control Delay         |      |      | 9.0   |      |       |      | HCM Level of Service |       | A    |      |      |      |
| HCM Volume to Capacity ratio      |      |      | 0.42  |      |       |      |                      |       |      |      |      |      |
| Actuated Cycle Length (s)         |      |      | 70.0  |      |       |      | Sum of lost time (s) |       | 8.0  |      |      |      |
| Intersection Capacity Utilization |      |      | 43.5% |      |       |      | ICU Level of Service |       | A    |      |      |      |
| Analysis Period (min)             |      |      | 15    |      |       |      |                      |       |      |      |      |      |
| c Critical Lane Group             |      |      |       |      |       |      |                      |       |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
 5880: N Street & 30th Street

7/11/2005



| Movement                          | EBL  | EBT   | WBT  | WBR  | NBL  | NBT  | NBR   | NEL2 | NEL   | NER  |
|-----------------------------------|------|-------|------|------|------|------|-------|------|-------|------|
| Lane Configurations               | ↙    | ↑     | ↘    |      |      | ↑↑↑  |       |      | ↘↙    |      |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 |
| Total Lost time (s)               | 4.0  | 4.0   | 4.0  |      |      | 4.0  |       |      | 4.0   |      |
| Lane Util. Factor                 | 1.00 | 1.00  | 1.00 |      |      | 0.91 |       |      | 0.97  |      |
| Fr <sub>t</sub>                   | 1.00 | 1.00  | 0.97 |      |      | 0.98 |       |      | 0.97  |      |
| Fl <sub>t</sub> Protected         | 0.95 | 1.00  | 1.00 |      |      | 0.99 |       |      | 0.96  |      |
| Satd. Flow (prot)                 | 1770 | 1863  | 1806 |      |      | 4964 |       |      | 3377  |      |
| Fl <sub>t</sub> Permitted         | 0.49 | 1.00  | 1.00 |      |      | 0.99 |       |      | 0.96  |      |
| Satd. Flow (perm)                 | 916  | 1863  | 1806 |      |      | 4964 |       |      | 3377  |      |
| Volume (vph)                      | 97   | 318   | 204  | 59   | 47   | 302  | 48    | 118  | 395   | 115  |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)                   | 97   | 318   | 204  | 59   | 47   | 302  | 48    | 118  | 395   | 115  |
| RTOR Reduction (vph)              | 0    | 0     | 15   | 0    | 0    | 26   | 0     | 0    | 0     | 0    |
| Lane Group Flow (vph)             | 97   | 318   | 248  | 0    | 0    | 371  | 0     | 0    | 628   | 0    |
| Turn Type                         | Perm |       |      | Perm |      |      | Split |      |       |      |
| Protected Phases                  |      | 4     | 8    |      |      | 2    |       | 6    | 6     |      |
| Permitted Phases                  | 4    |       |      |      | 2    |      |       |      |       |      |
| Actuated Green, G (s)             | 24.0 | 24.0  | 24.0 |      |      | 13.0 |       |      | 24.0  |      |
| Effective Green, g (s)            | 23.0 | 23.0  | 23.0 |      |      | 12.0 |       |      | 23.0  |      |
| Actuated g/C Ratio                | 0.33 | 0.33  | 0.33 |      |      | 0.17 |       |      | 0.33  |      |
| Clearance Time (s)                | 3.0  | 3.0   | 3.0  |      |      | 3.0  |       |      | 3.0   |      |
| Lane Grp Cap (vph)                | 301  | 612   | 593  |      |      | 851  |       |      | 1110  |      |
| v/s Ratio Prot                    |      | c0.17 | 0.14 |      |      |      |       |      | c0.19 |      |
| v/s Ratio Perm                    | 0.11 |       |      |      |      | 0.07 |       |      |       |      |
| v/c Ratio                         | 0.32 | 0.52  | 0.42 |      |      | 0.44 |       |      | 0.57  |      |
| Uniform Delay, d <sub>1</sub>     | 17.6 | 19.0  | 18.3 |      |      | 26.0 |       |      | 19.4  |      |
| Progression Factor                | 0.05 | 0.04  | 0.43 |      |      | 0.95 |       |      | 1.00  |      |
| Incremental Delay, d <sub>2</sub> | 1.9  | 2.1   | 1.8  |      |      | 1.6  |       |      | 2.1   |      |
| Delay (s)                         | 2.7  | 2.9   | 9.6  |      |      | 26.2 |       |      | 21.5  |      |
| Level of Service                  | A    | A     | A    |      |      | C    |       |      | C     |      |
| Approach Delay (s)                |      | 2.8   | 9.6  |      |      | 26.2 |       |      | 21.5  |      |
| Approach LOS                      |      | A     | A    |      |      | C    |       |      | C     |      |

**Intersection Summary**

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 16.2  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.52  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 59.1% | ICU Level of Service | B    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 5882: P Street & 30th Street

7/11/2005



| Movement               | WBT   | WBR  | WBR2 | NBL2 | NBL   | NBT  |
|------------------------|-------|------|------|------|-------|------|
| Lane Configurations    | ↑↑↑   |      |      |      | ↑     | ↑↑↑  |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0   |      |      |      | 4.0   | 4.0  |
| Lane Util. Factor      | 0.91  |      |      |      | 1.00  | 0.91 |
| Frt                    | 0.94  |      |      |      | 1.00  | 1.00 |
| Flt Protected          | 1.00  |      |      |      | 0.95  | 1.00 |
| Satd. Flow (prot)      | 4802  |      |      |      | 1593  | 4916 |
| Flt Permitted          | 1.00  |      |      |      | 0.95  | 1.00 |
| Satd. Flow (perm)      | 4802  |      |      |      | 1593  | 4916 |
| Volume (vph)           | 683   | 271  | 132  | 110  | 440   | 328  |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 683   | 271  | 132  | 110  | 440   | 328  |
| RTOR Reduction (vph)   | 26    | 0    | 0    | 0    | 13    | 0    |
| Lane Group Flow (vph)  | 1060  | 0    | 0    | 0    | 537   | 328  |
| Parking (#/hr)         |       | 0    | 0    | 0    | 0     | 0    |
| Turn Type              |       |      |      | Perm | Perm  |      |
| Protected Phases       | 6     |      |      |      |       | 8    |
| Permitted Phases       |       |      |      | 8    | 8     |      |
| Actuated Green, G (s)  | 26.0  |      |      |      | 38.0  | 38.0 |
| Effective Green, g (s) | 25.0  |      |      |      | 37.0  | 37.0 |
| Actuated g/C Ratio     | 0.36  |      |      |      | 0.53  | 0.53 |
| Clearance Time (s)     | 3.0   |      |      |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)     | 1715  |      |      |      | 842   | 2598 |
| v/s Ratio Prot         | c0.22 |      |      |      |       | 0.07 |
| v/s Ratio Perm         |       |      |      |      | c0.34 |      |
| v/c Ratio              | 0.62  |      |      |      | 0.64  | 0.13 |
| Uniform Delay, d1      | 18.6  |      |      |      | 11.7  | 8.3  |
| Progression Factor     | 0.27  |      |      |      | 1.00  | 1.00 |
| Incremental Delay, d2  | 1.1   |      |      |      | 3.7   | 0.1  |
| Delay (s)              | 6.2   |      |      |      | 15.4  | 8.4  |
| Level of Service       | A     |      |      |      | B     | A    |
| Approach Delay (s)     | 6.2   |      |      |      |       | 12.8 |
| Approach LOS           | A     |      |      |      |       | B    |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 9.1   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.63  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 59.4% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
 5886: Capitol & 30th Street

7/11/2005



| Movement               | EBL   | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|-------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    | ↖     | ↗    |      |      | ↖     | ↗    |      | ↖    | ↗    |      |      |      |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0   | 4.0  |      |      | 4.0   |      |      | 4.0  |      |      |      |      |
| Lane Util. Factor      | 1.00  | 0.95 |      |      | 0.95  |      |      | 0.91 |      |      |      |      |
| Fr't                   | 1.00  | 1.00 |      |      | 0.98  |      |      | 0.98 |      |      |      |      |
| Flt Protected          | 0.95  | 1.00 |      |      | 1.00  |      |      | 1.00 |      |      |      |      |
| Satd. Flow (prot)      | 1770  | 3539 |      |      | 3467  |      |      | 4979 |      |      |      |      |
| Flt Permitted          | 0.95  | 1.00 |      |      | 1.00  |      |      | 1.00 |      |      |      |      |
| Satd. Flow (perm)      | 1770  | 3539 |      |      | 3467  |      |      | 4979 |      |      |      |      |
| Volume (vph)           | 116   | 414  | 0    | 0    | 482   | 76   | 70   | 679  | 95   | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 116   | 414  | 0    | 0    | 482   | 76   | 70   | 679  | 95   | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0     | 0    | 0    | 0    | 18    | 0    | 0    | 23   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 116   | 414  | 0    | 0    | 540   | 0    | 0    | 821  | 0    | 0    | 0    | 0    |
| Turn Type              | Prot  |      |      |      |       |      | Perm |      |      |      |      |      |
| Protected Phases       | 7     | 4    |      |      | 8     |      |      | 2    |      |      |      |      |
| Permitted Phases       |       |      |      |      |       |      | 2    |      |      |      |      |      |
| Actuated Green, G (s)  | 16.0  | 42.0 |      |      | 23.0  |      |      | 22.0 |      |      |      |      |
| Effective Green, g (s) | 15.0  | 41.0 |      |      | 22.0  |      |      | 21.0 |      |      |      |      |
| Actuated g/C Ratio     | 0.21  | 0.59 |      |      | 0.31  |      |      | 0.30 |      |      |      |      |
| Clearance Time (s)     | 3.0   | 3.0  |      |      | 3.0   |      |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)     | 379   | 2073 |      |      | 1090  |      |      | 1494 |      |      |      |      |
| v/s Ratio Prot         | c0.07 | 0.12 |      |      | c0.16 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |       |      |      |      |       |      |      | 0.16 |      |      |      |      |
| v/c Ratio              | 0.31  | 0.20 |      |      | 0.50  |      |      | 0.55 |      |      |      |      |
| Uniform Delay, d1      | 23.1  | 6.8  |      |      | 19.5  |      |      | 20.5 |      |      |      |      |
| Progression Factor     | 0.71  | 0.57 |      |      | 0.33  |      |      | 1.12 |      |      |      |      |
| Incremental Delay, d2  | 1.9   | 0.2  |      |      | 1.0   |      |      | 1.3  |      |      |      |      |
| Delay (s)              | 18.3  | 4.1  |      |      | 7.4   |      |      | 24.2 |      |      |      |      |
| Level of Service       | B     | A    |      |      | A     |      |      | C    |      |      |      |      |
| Approach Delay (s)     |       | 7.2  |      |      | 7.4   |      |      | 24.2 |      |      | 0.0  |      |
| Approach LOS           |       | A    |      |      | A     |      |      | C    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 14.7  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.47  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 65.6% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 5888: Capitol & 29th Street

7/11/2005



| Movement                          | EBL  | EBT  | EBR  | WBL   | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|------|-------|------|------|------|------|------|------|------|------|
| Lane Configurations               |      | ↑↓   |      | ↖     | ↑↑   |      |      |      |      |      | ↑↑↓  |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0  |      | 4.0   | 4.0  |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor                 |      | 0.95 |      | 1.00  | 0.95 |      |      |      |      |      | 0.91 |      |
| Fr <sub>t</sub>                   |      | 0.95 |      | 1.00  | 1.00 |      |      |      |      |      | 0.99 |      |
| Fl <sub>t</sub> Protected         |      | 1.00 |      | 0.95  | 1.00 |      |      |      |      |      | 1.00 |      |
| Satd. Flow (prot)                 |      | 3179 |      | 1770  | 3539 |      |      |      |      |      | 4860 |      |
| Fl <sub>t</sub> Permitted         |      | 1.00 |      | 0.37  | 1.00 |      |      |      |      |      | 1.00 |      |
| Satd. Flow (perm)                 |      | 3179 |      | 697   | 3539 |      |      |      |      |      | 4860 |      |
| Volume (vph)                      | 0    | 397  | 226  | 200   | 417  | 0    | 0    | 0    | 0    | 124  | 1162 | 62   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 397  | 226  | 200   | 417  | 0    | 0    | 0    | 0    | 124  | 1162 | 62   |
| RTOR Reduction (vph)              | 0    | 7    | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 8    | 0    |
| Lane Group Flow (vph)             | 0    | 616  | 0    | 200   | 417  | 0    | 0    | 0    | 0    | 0    | 1340 | 0    |
| Parking (#/hr)                    |      | 0    | 0    |       |      |      |      |      |      |      | 0    | 0    |
| Turn Type                         |      |      |      | Perm  |      |      |      |      |      |      | Perm |      |
| Protected Phases                  |      | 4    |      |       | 8    |      |      |      |      |      |      | 6    |
| Permitted Phases                  |      |      |      | 8     |      |      |      |      |      | 6    |      |      |
| Actuated Green, G (s)             |      | 37.0 |      | 37.0  | 37.0 |      |      |      |      |      | 27.0 |      |
| Effective Green, g (s)            |      | 36.0 |      | 36.0  | 36.0 |      |      |      |      |      | 26.0 |      |
| Actuated g/C Ratio                |      | 0.51 |      | 0.51  | 0.51 |      |      |      |      |      | 0.37 |      |
| Clearance Time (s)                |      | 3.0  |      | 3.0   | 3.0  |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |      | 1635 |      | 358   | 1820 |      |      |      |      |      | 1805 |      |
| v/s Ratio Prot                    |      | 0.19 |      |       | 0.12 |      |      |      |      |      |      |      |
| v/s Ratio Perm                    |      |      |      | c0.29 |      |      |      |      |      |      | 0.28 |      |
| v/c Ratio                         |      | 0.38 |      | 0.56  | 0.23 |      |      |      |      |      | 0.74 |      |
| Uniform Delay, d <sub>1</sub>     |      | 10.2 |      | 11.6  | 9.4  |      |      |      |      |      | 19.1 |      |
| Progression Factor                |      | 0.60 |      | 0.45  | 0.30 |      |      |      |      |      | 0.47 |      |
| Incremental Delay, d <sub>2</sub> |      | 0.6  |      | 5.6   | 0.3  |      |      |      |      |      | 2.5  |      |
| Delay (s)                         |      | 6.8  |      | 10.8  | 3.0  |      |      |      |      |      | 11.4 |      |
| Level of Service                  |      | A    |      | B     | A    |      |      |      |      |      | B    |      |
| Approach Delay (s)                |      | 6.8  |      |       | 5.5  |      |      | 0.0  |      |      | 11.4 |      |
| Approach LOS                      |      | A    |      |       | A    |      |      | A    |      |      | B    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 8.9   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.64  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 65.6% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 5890: Capitol & 26th St

7/11/2005

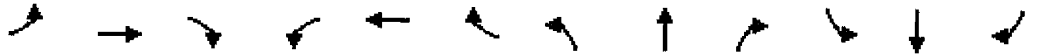


| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|-------|------|
| Lane Configurations    |      |      |      |      |       |      |      |      |      |      |       |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0  | 4.0  |      | 4.0  | 4.0   |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor      | 1.00 | 1.00 |      | 1.00 | 1.00  |      |      | 1.00 |      |      | 1.00  |      |
| Frt                    | 1.00 | 1.00 |      | 1.00 | 0.99  |      |      | 0.97 |      |      | 0.98  |      |
| Flt Protected          | 0.95 | 1.00 |      | 0.95 | 1.00  |      |      | 0.99 |      |      | 0.99  |      |
| Satd. Flow (prot)      | 1770 | 1668 |      | 1770 | 1664  |      |      | 1622 |      |      | 1624  |      |
| Flt Permitted          | 0.39 | 1.00 |      | 0.45 | 1.00  |      |      | 0.98 |      |      | 0.93  |      |
| Satd. Flow (perm)      | 730  | 1668 |      | 847  | 1664  |      |      | 1592 |      |      | 1528  |      |
| Volume (vph)           | 12   | 393  | 13   | 23   | 454   | 23   | 9    | 48   | 14   | 27   | 51    | 11   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 12   | 393  | 13   | 23   | 454   | 23   | 9    | 48   | 14   | 27   | 51    | 11   |
| RTOR Reduction (vph)   | 0    | 3    | 0    | 0    | 4     | 0    | 0    | 9    | 0    | 0    | 7     | 0    |
| Lane Group Flow (vph)  | 12   | 404  | 0    | 23   | 474   | 0    | 0    | 62   | 0    | 0    | 82    | 0    |
| Parking (#/hr)         |      | 0    | 0    |      | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Turn Type              | Perm |      |      | Perm |       |      | Perm |      |      | Perm |       |      |
| Protected Phases       |      | 4    |      |      | 8     |      |      | 2    |      |      | 6     |      |
| Permitted Phases       | 4    |      |      | 8    |       |      | 2    |      |      | 6    |       |      |
| Actuated Green, G (s)  | 26.0 | 26.0 |      | 26.0 | 26.0  |      |      | 18.0 |      |      | 18.0  |      |
| Effective Green, g (s) | 25.0 | 25.0 |      | 25.0 | 25.0  |      |      | 17.0 |      |      | 17.0  |      |
| Actuated g/C Ratio     | 0.50 | 0.50 |      | 0.50 | 0.50  |      |      | 0.34 |      |      | 0.34  |      |
| Clearance Time (s)     | 3.0  | 3.0  |      | 3.0  | 3.0   |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)     | 365  | 834  |      | 424  | 832   |      |      | 541  |      |      | 520   |      |
| v/s Ratio Prot         |      | 0.24 |      |      | c0.28 |      |      |      |      |      |       |      |
| v/s Ratio Perm         | 0.02 |      |      | 0.03 |       |      |      | 0.04 |      |      | c0.05 |      |
| v/c Ratio              | 0.03 | 0.48 |      | 0.05 | 0.57  |      |      | 0.11 |      |      | 0.16  |      |
| Uniform Delay, d1      | 6.4  | 8.2  |      | 6.4  | 8.7   |      |      | 11.3 |      |      | 11.5  |      |
| Progression Factor     | 1.00 | 1.00 |      | 1.00 | 1.00  |      |      | 1.00 |      |      | 0.68  |      |
| Incremental Delay, d2  | 0.2  | 2.0  |      | 0.2  | 2.8   |      |      | 0.4  |      |      | 0.6   |      |
| Delay (s)              | 6.5  | 10.2 |      | 6.7  | 11.6  |      |      | 11.8 |      |      | 8.4   |      |
| Level of Service       | A    | B    |      | A    | B     |      |      | B    |      |      | A     |      |
| Approach Delay (s)     |      | 10.1 |      |      | 11.3  |      |      | 11.8 |      |      | 8.4   |      |
| Approach LOS           |      | B    |      |      | B     |      |      | B    |      |      | A     |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.7  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.40  |                      |     |
| Actuated Cycle Length (s)         | 50.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 41.5% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6481: J Street & 28th Street

7/11/2005



| Movement                          | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT                  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|-------|------|------|------|------|------|----------------------|------|------|------|------|
| Lane Configurations               |      | ↑↑↑   |      |      |      |      |      | ↑                    |      |      | ↑    |      |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0   |      |      |      |      |      | 4.0                  |      |      | 4.0  |      |
| Lane Util. Factor                 |      | 0.91  |      |      |      |      |      | 1.00                 |      |      | 1.00 |      |
| Frt                               |      | 0.99  |      |      |      |      |      | 0.93                 |      |      | 1.00 |      |
| Flt Protected                     |      | 1.00  |      |      |      |      |      | 1.00                 |      |      | 0.99 |      |
| Satd. Flow (prot)                 |      | 4878  |      |      |      |      |      | 1552                 |      |      | 1657 |      |
| Flt Permitted                     |      | 1.00  |      |      |      |      |      | 1.00                 |      |      | 0.92 |      |
| Satd. Flow (perm)                 |      | 4878  |      |      |      |      |      | 1552                 |      |      | 1546 |      |
| Volume (vph)                      | 44   | 1423  | 63   | 0    | 0    | 0    | 0    | 155                  | 188  | 13   | 41   | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 44   | 1423  | 63   | 0    | 0    | 0    | 0    | 155                  | 188  | 13   | 41   | 0    |
| RTOR Reduction (vph)              | 0    | 7     | 0    | 0    | 0    | 0    | 0    | 9                    | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 0    | 1523  | 0    | 0    | 0    | 0    | 0    | 334                  | 0    | 0    | 54   | 0    |
| Parking (#/hr)                    | 0    | 0     | 0    |      |      |      |      | 0                    | 0    | 0    | 0    |      |
| Turn Type                         | Perm |       |      |      |      |      | Perm |                      |      |      |      |      |
| Protected Phases                  |      | 4     |      |      |      |      |      | 2                    |      |      | 6    |      |
| Permitted Phases                  | 4    |       |      |      |      |      |      |                      |      | 6    |      |      |
| Actuated Green, G (s)             |      | 33.0  |      |      |      |      |      | 31.0                 |      |      | 31.0 |      |
| Effective Green, g (s)            |      | 32.0  |      |      |      |      |      | 30.0                 |      |      | 30.0 |      |
| Actuated g/C Ratio                |      | 0.46  |      |      |      |      |      | 0.43                 |      |      | 0.43 |      |
| Clearance Time (s)                |      | 3.0   |      |      |      |      |      | 3.0                  |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |      | 2230  |      |      |      |      |      | 665                  |      |      | 663  |      |
| v/s Ratio Prot                    |      |       |      |      |      |      |      | 0.22                 |      |      |      |      |
| v/s Ratio Perm                    |      | 0.31  |      |      |      |      |      |                      |      |      | 0.03 |      |
| v/c Ratio                         |      | 0.68  |      |      |      |      |      | 0.50                 |      |      | 0.08 |      |
| Uniform Delay, d1                 |      | 15.0  |      |      |      |      |      | 14.6                 |      |      | 11.8 |      |
| Progression Factor                |      | 1.00  |      |      |      |      |      | 0.71                 |      |      | 1.00 |      |
| Incremental Delay, d2             |      | 1.7   |      |      |      |      |      | 2.7                  |      |      | 0.2  |      |
| Delay (s)                         |      | 16.7  |      |      |      |      |      | 13.0                 |      |      | 12.1 |      |
| Level of Service                  |      | B     |      |      |      |      |      | B                    |      |      | B    |      |
| Approach Delay (s)                |      | 16.7  |      |      | 0.0  |      |      | 13.0                 |      |      | 12.1 |      |
| Approach LOS                      |      | B     |      |      | A    |      |      | B                    |      |      | B    |      |
| <b>Intersection Summary</b>       |      |       |      |      |      |      |      |                      |      |      |      |      |
| HCM Average Control Delay         |      | 15.9  |      |      |      |      |      | HCM Level of Service |      | B    |      |      |
| HCM Volume to Capacity ratio      |      | 0.60  |      |      |      |      |      |                      |      |      |      |      |
| Actuated Cycle Length (s)         |      | 70.0  |      |      |      |      |      | Sum of lost time (s) |      | 8.0  |      |      |
| Intersection Capacity Utilization |      | 56.1% |      |      |      |      |      | ICU Level of Service |      | B    |      |      |
| Analysis Period (min)             |      | 15    |      |      |      |      |      |                      |      |      |      |      |
| c Critical Lane Group             |      |       |      |      |      |      |      |                      |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
6482: K Street & 28th Street

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↕    | ↗    |      | ↕    | ↗    |      | ↕    | ↗    |      | ↕    | ↗    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  |      | 4.0  | 4.0  |      | 4.0  | 4.0  |      | 4.0  | 4.0  |
| Lane Util. Factor      |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |
| Frt                    |      | 1.00 | 0.85 |      | 1.00 | 0.85 |      | 1.00 | 0.85 |      | 1.00 | 0.85 |
| Flt Protected          |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 0.99 | 1.00 |
| Satd. Flow (prot)      |      | 1675 | 1425 |      | 1671 | 1425 |      | 1670 | 1425 |      | 1663 | 1425 |
| Flt Permitted          |      | 0.99 | 1.00 |      | 0.97 | 1.00 |      | 0.98 | 1.00 |      | 0.95 | 1.00 |
| Satd. Flow (perm)      |      | 1663 | 1425 |      | 1622 | 1425 |      | 1639 | 1425 |      | 1588 | 1425 |
| Volume (vph)           | 7    | 348  | 22   | 34   | 524  | 94   | 14   | 155  | 54   | 22   | 115  | 31   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 7    | 348  | 22   | 34   | 524  | 94   | 14   | 155  | 54   | 22   | 115  | 31   |
| RTOR Reduction (vph)   | 0    | 0    | 9    | 0    | 0    | 30   | 0    | 0    | 39   | 0    | 0    | 22   |
| Lane Group Flow (vph)  | 0    | 355  | 13   | 0    | 558  | 64   | 0    | 169  | 15   | 0    | 137  | 9    |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      | Perm | Perm |      | Perm | Perm |      | Perm | Perm |      | Perm |
| Protected Phases       |      | 4    |      |      | 8    |      |      | 2    |      |      | 6    |      |
| Permitted Phases       | 4    |      | 4    | 8    |      | 8    | 2    |      | 2    | 6    |      | 6    |
| Actuated Green, G (s)  |      | 43.0 | 43.0 |      | 43.0 | 43.0 |      | 21.0 | 21.0 |      | 21.0 | 21.0 |
| Effective Green, g (s) |      | 42.0 | 42.0 |      | 42.0 | 42.0 |      | 20.0 | 20.0 |      | 20.0 | 20.0 |
| Actuated g/C Ratio     |      | 0.60 | 0.60 |      | 0.60 | 0.60 |      | 0.29 | 0.29 |      | 0.29 | 0.29 |
| Clearance Time (s)     |      | 3.0  | 3.0  |      | 3.0  | 3.0  |      | 3.0  | 3.0  |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |      | 998  | 855  |      | 973  | 855  |      | 468  | 407  |      | 454  | 407  |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      | 0.21 | 0.01 |      | 0.34 | 0.05 |      | 0.10 | 0.01 |      | 0.09 | 0.01 |
| v/c Ratio              |      | 0.36 | 0.02 |      | 0.57 | 0.08 |      | 0.36 | 0.04 |      | 0.30 | 0.02 |
| Uniform Delay, d1      |      | 7.1  | 5.7  |      | 8.5  | 5.9  |      | 19.9 | 18.1 |      | 19.5 | 18.0 |
| Progression Factor     |      | 1.00 | 1.00 |      | 0.43 | 0.33 |      | 0.76 | 1.36 |      | 0.89 | 0.83 |
| Incremental Delay, d2  |      | 1.0  | 0.0  |      | 2.2  | 0.1  |      | 2.0  | 0.2  |      | 1.7  | 0.1  |
| Delay (s)              |      | 8.1  | 5.7  |      | 5.8  | 2.1  |      | 17.2 | 24.7 |      | 19.1 | 14.9 |
| Level of Service       |      | A    | A    |      | A    | A    |      | B    | C    |      | B    | B    |
| Approach Delay (s)     |      | 8.0  |      |      | 5.3  |      |      | 19.0 |      |      | 18.3 |      |
| Approach LOS           |      | A    |      |      | A    |      |      | B    |      |      | B    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 9.7   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.50  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 77.7% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6483: L Street & 28th Street

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations    |      |      |      |      | ↕    |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor      |      |      |      |      | 0.95 |      |      | 1.00  |      |      | 1.00 |      |
| Frt                    |      |      |      |      | 0.99 |      |      | 1.00  |      |      | 0.98 |      |
| Fit Protected          |      |      |      |      | 1.00 |      |      | 0.99  |      |      | 1.00 |      |
| Satd. Flow (prot)      |      |      |      |      | 3313 |      |      | 1664  |      |      | 1641 |      |
| Fit Permitted          |      |      |      |      | 1.00 |      |      | 0.94  |      |      | 1.00 |      |
| Satd. Flow (perm)      |      |      |      |      | 3313 |      |      | 1578  |      |      | 1641 |      |
| Volume (vph)           | 0    | 0    | 0    | 21   | 441  | 42   | 45   | 260   | 0    | 0    | 153  | 28   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 21   | 441  | 42   | 45   | 260   | 0    | 0    | 153  | 28   |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 10   | 0    | 0    | 0     | 0    | 0    | 10   | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 494  | 0    | 0    | 305   | 0    | 0    | 171  | 0    |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type              |      |      |      | Perm |      |      | Perm |       |      |      |      |      |
| Protected Phases       |      |      |      |      | 6    |      |      | 8     |      |      | 4    |      |
| Permitted Phases       |      |      |      | 6    |      |      | 8    |       |      |      |      |      |
| Actuated Green, G (s)  |      |      |      |      | 30.0 |      |      | 34.0  |      |      | 34.0 |      |
| Effective Green, g (s) |      |      |      |      | 29.0 |      |      | 33.0  |      |      | 33.0 |      |
| Actuated g/C Ratio     |      |      |      |      | 0.41 |      |      | 0.47  |      |      | 0.47 |      |
| Clearance Time (s)     |      |      |      |      | 3.0  |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      |      |      |      | 1373 |      |      | 744   |      |      | 774  |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      |       |      |      | 0.10 |      |
| v/s Ratio Perm         |      |      |      |      | 0.15 |      |      | c0.19 |      |      |      |      |
| v/c Ratio              |      |      |      |      | 0.36 |      |      | 0.41  |      |      | 0.22 |      |
| Uniform Delay, d1      |      |      |      |      | 14.1 |      |      | 12.1  |      |      | 10.9 |      |
| Progression Factor     |      |      |      |      | 0.42 |      |      | 0.59  |      |      | 1.84 |      |
| Incremental Delay, d2  |      |      |      |      | 0.7  |      |      | 1.6   |      |      | 0.6  |      |
| Delay (s)              |      |      |      |      | 6.7  |      |      | 8.8   |      |      | 20.7 |      |
| Level of Service       |      |      |      |      | A    |      |      | A     |      |      | C    |      |
| Approach Delay (s)     |      | 0.0  |      |      | 6.7  |      |      | 8.8   |      |      | 20.7 |      |
| Approach LOS           |      | A    |      |      | A    |      |      | A     |      |      | C    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 9.9   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.39  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 50.1% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6484: Capitol & 28th Street

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|-------|------|------|------|------|
| Lane Configurations    |      | ↕    |      | ↖    | ↗     |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      | 4.0  | 4.0   |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00 |      | 1.00 | 1.00  |      |      | 1.00  |      |      | 1.00 |      |
| Frt                    |      | 0.99 |      | 1.00 | 0.99  |      |      | 0.96  |      |      | 1.00 |      |
| Flt Protected          |      | 1.00 |      | 0.95 | 1.00  |      |      | 0.99  |      |      | 0.99 |      |
| Satd. Flow (prot)      |      | 1666 |      | 1770 | 1657  |      |      | 1598  |      |      | 1648 |      |
| Flt Permitted          |      | 0.99 |      | 0.46 | 1.00  |      |      | 0.96  |      |      | 0.89 |      |
| Satd. Flow (perm)      |      | 1648 |      | 857  | 1657  |      |      | 1538  |      |      | 1479 |      |
| Volume (vph)           | 11   | 432  | 18   | 24   | 496   | 42   | 30   | 151   | 79   | 46   | 128  | 6    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 11   | 432  | 18   | 24   | 496   | 42   | 30   | 151   | 79   | 46   | 128  | 6    |
| RTOR Reduction (vph)   | 0    | 2    | 0    | 0    | 4     | 0    | 0    | 22    | 0    | 0    | 2    | 0    |
| Lane Group Flow (vph)  | 0    | 459  | 0    | 24   | 534   | 0    | 0    | 238   | 0    | 0    | 178  | 0    |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      |      | Perm |       |      | Perm |       |      | Perm |      |      |
| Protected Phases       |      | 4    |      |      | 8     |      |      | 2     |      |      | 6    |      |
| Permitted Phases       | 4    |      |      | 8    |       |      | 2    |       |      | 6    |      |      |
| Actuated Green, G (s)  |      | 40.0 |      | 40.0 | 40.0  |      |      | 24.0  |      |      | 24.0 |      |
| Effective Green, g (s) |      | 39.0 |      | 39.0 | 39.0  |      |      | 23.0  |      |      | 23.0 |      |
| Actuated g/C Ratio     |      | 0.56 |      | 0.56 | 0.56  |      |      | 0.33  |      |      | 0.33 |      |
| Clearance Time (s)     |      | 3.0  |      | 3.0  | 3.0   |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 918  |      | 477  | 923   |      |      | 505   |      |      | 486  |      |
| v/s Ratio Prot         |      |      |      |      | c0.32 |      |      |       |      |      |      |      |
| v/s Ratio Perm         |      | 0.28 |      | 0.03 |       |      |      | c0.15 |      |      | 0.12 |      |
| v/c Ratio              |      | 0.50 |      | 0.05 | 0.58  |      |      | 0.47  |      |      | 0.37 |      |
| Uniform Delay, d1      |      | 9.5  |      | 7.1  | 10.1  |      |      | 18.7  |      |      | 17.9 |      |
| Progression Factor     |      | 1.00 |      | 0.34 | 0.39  |      |      | 0.91  |      |      | 0.37 |      |
| Incremental Delay, d2  |      | 1.9  |      | 0.2  | 2.6   |      |      | 3.0   |      |      | 2.1  |      |
| Delay (s)              |      | 11.5 |      | 2.6  | 6.5   |      |      | 20.0  |      |      | 8.8  |      |
| Level of Service       |      | B    |      | A    | A     |      |      | C     |      |      | A    |      |
| Approach Delay (s)     |      | 11.5 |      |      | 6.4   |      |      | 20.0  |      |      | 8.8  |      |
| Approach LOS           |      | B    |      |      | A     |      |      | C     |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.7  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.54  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 57.3% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6485: N Street & 28th Street

7/11/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|-------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations    |      | ↔↔    |      |      | ↕    |      |      | ↑    |      |      | ↓     |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      | 4.0  |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor      |      | 0.95  |      |      | 1.00 |      |      | 1.00 |      |      | 1.00  |      |
| Frt                    |      | 1.00  |      |      | 0.90 |      |      | 0.96 |      |      | 1.00  |      |
| Flt Protected          |      | 0.99  |      |      | 0.99 |      |      | 1.00 |      |      | 0.98  |      |
| Satd. Flow (prot)      |      | 3327  |      |      | 1495 |      |      | 1611 |      |      | 1651  |      |
| Flt Permitted          |      | 0.90  |      |      | 0.77 |      |      | 1.00 |      |      | 0.89  |      |
| Satd. Flow (perm)      |      | 3013  |      |      | 1172 |      |      | 1611 |      |      | 1486  |      |
| Volume (vph)           | 99   | 695   | 24   | 32   | 0    | 77   | 0    | 124  | 51   | 44   | 99    | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 99   | 695   | 24   | 32   | 0    | 77   | 0    | 124  | 51   | 44   | 99    | 0    |
| RTOR Reduction (vph)   | 0    | 3     | 0    | 0    | 37   | 0    | 0    | 21   | 0    | 0    | 0     | 0    |
| Lane Group Flow (vph)  | 0    | 815   | 0    | 0    | 72   | 0    | 0    | 154  | 0    | 0    | 143   | 0    |
| Parking (#/hr)         | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Turn Type              | Perm |       | Perm |      |      |      | Perm |      |      |      |       |      |
| Protected Phases       |      | 2     |      |      | 6    |      |      | 8    |      |      | 4     |      |
| Permitted Phases       | 2    |       |      | 6    |      |      |      |      | 4    |      |       |      |
| Actuated Green, G (s)  |      | 37.0  |      |      | 37.0 |      |      | 27.0 |      |      | 27.0  |      |
| Effective Green, g (s) |      | 36.0  |      |      | 36.0 |      |      | 26.0 |      |      | 26.0  |      |
| Actuated g/C Ratio     |      | 0.51  |      |      | 0.51 |      |      | 0.37 |      |      | 0.37  |      |
| Clearance Time (s)     |      | 3.0   |      |      | 3.0  |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)     |      | 1550  |      |      | 603  |      |      | 598  |      |      | 552   |      |
| v/s Ratio Prot         |      |       |      |      |      |      |      | 0.10 |      |      |       |      |
| v/s Ratio Perm         |      | c0.27 |      |      | 0.06 |      |      |      |      |      | c0.10 |      |
| v/c Ratio              |      | 0.53  |      |      | 0.12 |      |      | 0.26 |      |      | 0.26  |      |
| Uniform Delay, d1      |      | 11.3  |      |      | 8.8  |      |      | 15.3 |      |      | 15.3  |      |
| Progression Factor     |      | 1.00  |      |      | 1.45 |      |      | 1.00 |      |      | 0.39  |      |
| Incremental Delay, d2  |      | 1.3   |      |      | 0.3  |      |      | 1.0  |      |      | 1.1   |      |
| Delay (s)              |      | 12.6  |      |      | 13.1 |      |      | 16.3 |      |      | 7.0   |      |
| Level of Service       |      | B     |      |      | B    |      |      | B    |      |      | A     |      |
| Approach Delay (s)     |      | 12.6  |      |      | 13.1 |      |      | 16.3 |      |      | 7.0   |      |
| Approach LOS           |      | B     |      |      | B    |      |      | B    |      |      | A     |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 12.5  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.41  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 60.0% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
6511: K Street & Alhambra

7/11/2005



| Movement                  | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|---------------------------|------|-------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations       |      | ↕     | ↗    |      | ↕    |      |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)        | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)       |      | 4.0   | 4.0  |      | 4.0  |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor         |      | 1.00  | 1.00 |      | 1.00 |      |      | 0.95 |      |      | 0.95  |      |
| Fr <sub>t</sub>           |      | 1.00  | 0.85 |      | 0.99 |      |      | 0.98 |      |      | 0.96  |      |
| Fl <sub>t</sub> Protected |      | 0.97  | 1.00 |      | 0.99 |      |      | 0.99 |      |      | 1.00  |      |
| Satd. Flow (prot)         |      | 1815  | 1583 |      | 1816 |      |      | 3421 |      |      | 3389  |      |
| Fl <sub>t</sub> Permitted |      | 0.79  | 1.00 |      | 0.90 |      |      | 0.62 |      |      | 0.95  |      |
| Satd. Flow (perm)         |      | 1468  | 1583 |      | 1662 |      |      | 2143 |      |      | 3218  |      |
| Volume (vph)              | 93   | 83    | 178  | 39   | 97   | 14   | 111  | 345  | 85   | 12   | 766   | 303  |
| Peak-hour factor, PHF     | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)           | 93   | 83    | 178  | 39   | 97   | 14   | 111  | 345  | 85   | 12   | 766   | 303  |
| RTOR Reduction (vph)      | 0    | 0     | 112  | 0    | 5    | 0    | 0    | 22   | 0    | 0    | 59    | 0    |
| Lane Group Flow (vph)     | 0    | 176   | 66   | 0    | 145  | 0    | 0    | 519  | 0    | 0    | 1022  | 0    |
| Turn Type                 | Perm |       | Perm | Perm |      |      | Perm |      |      | Perm |       |      |
| Protected Phases          |      | 4     |      |      | 8    |      |      | 2    |      |      |       | 6    |
| Permitted Phases          | 4    |       | 4    | 8    |      |      | 2    |      |      | 6    |       |      |
| Actuated Green, G (s)     |      | 25.0  | 25.0 |      | 25.0 |      |      | 39.0 |      |      | 39.0  |      |
| Effective Green, g (s)    |      | 24.0  | 24.0 |      | 24.0 |      |      | 38.0 |      |      | 38.0  |      |
| Actuated g/C Ratio        |      | 0.34  | 0.34 |      | 0.34 |      |      | 0.54 |      |      | 0.54  |      |
| Clearance Time (s)        |      | 3.0   | 3.0  |      | 3.0  |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)        |      | 503   | 543  |      | 570  |      |      | 1163 |      |      | 1747  |      |
| v/s Ratio Prot            |      |       |      |      |      |      |      |      |      |      |       |      |
| v/s Ratio Perm            |      | c0.12 | 0.04 |      | 0.09 |      |      | 0.24 |      |      | c0.32 |      |
| v/c Ratio                 |      | 0.35  | 0.12 |      | 0.25 |      |      | 0.45 |      |      | 0.59  |      |
| Uniform Delay, d1         |      | 17.2  | 15.8 |      | 16.6 |      |      | 9.7  |      |      | 10.7  |      |
| Progression Factor        |      | 0.76  | 1.38 |      | 1.00 |      |      | 0.29 |      |      | 0.54  |      |
| Incremental Delay, d2     |      | 1.8   | 0.4  |      | 1.1  |      |      | 0.9  |      |      | 1.0   |      |
| Delay (s)                 |      | 14.8  | 22.2 |      | 17.6 |      |      | 3.8  |      |      | 6.8   |      |
| Level of Service          |      | B     | C    |      | B    |      |      | A    |      |      | A     |      |
| Approach Delay (s)        |      | 18.5  |      |      | 17.6 |      |      | 3.8  |      |      | 6.8   |      |
| Approach LOS              |      | B     |      |      | B    |      |      | A    |      |      | A     |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 8.7   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.49  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 72.9% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

9622: K Street & 30th Street

7/11/2005

| Movement                          | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations               |      |      |      |      |       |      |      |      |      |      |      |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               | 4.0  | 4.0  |      |      | 4.0   | 4.0  |      | 4.0  |      |      |      |      |
| Lane Util. Factor                 | 1.00 | 1.00 |      |      | 1.00  | 1.00 |      | 0.91 |      |      |      |      |
| Fr <sub>t</sub>                   | 1.00 | 1.00 |      |      | 1.00  | 0.85 |      | 0.98 |      |      |      |      |
| Fl <sub>t</sub> Protected         | 0.95 | 1.00 |      |      | 1.00  | 1.00 |      | 0.99 |      |      |      |      |
| Satd. Flow (prot)                 | 1770 | 1863 |      |      | 1863  | 1583 |      | 4955 |      |      |      |      |
| Fl <sub>t</sub> Permitted         | 0.39 | 1.00 |      |      | 1.00  | 1.00 |      | 0.99 |      |      |      |      |
| Satd. Flow (perm)                 | 722  | 1863 |      |      | 1863  | 1583 |      | 4955 |      |      |      |      |
| Volume (vph)                      | 93   | 278  | 0    | 0    | 456   | 54   | 207  | 702  | 106  | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 93   | 278  | 0    | 0    | 456   | 54   | 207  | 702  | 106  | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0    | 0    | 0    | 0    | 0     | 27   | 0    | 20   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 93   | 278  | 0    | 0    | 456   | 27   | 0    | 995  | 0    | 0    | 0    | 0    |
| Turn Type                         | Perm |      |      | Perm |       |      | Perm |      | Perm |      |      |      |
| Protected Phases                  | 4    |      |      | 8    |       |      | 2    |      |      |      |      |      |
| Permitted Phases                  | 4    |      |      | 8    |       |      | 2    |      |      |      |      |      |
| Actuated Green, G (s)             | 36.0 | 36.0 |      |      | 36.0  | 36.0 |      | 28.0 |      |      |      |      |
| Effective Green, g (s)            | 35.0 | 35.0 |      |      | 35.0  | 35.0 |      | 27.0 |      |      |      |      |
| Actuated g/C Ratio                | 0.50 | 0.50 |      |      | 0.50  | 0.50 |      | 0.39 |      |      |      |      |
| Clearance Time (s)                | 3.0  | 3.0  |      |      | 3.0   | 3.0  |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)                | 361  | 932  |      |      | 932   | 792  |      | 1911 |      |      |      |      |
| v/s Ratio Prot                    |      | 0.15 |      |      | c0.24 |      |      |      |      |      |      |      |
| v/s Ratio Perm                    | 0.13 |      |      |      |       | 0.02 |      | 0.20 |      |      |      |      |
| v/c Ratio                         | 0.26 | 0.30 |      |      | 0.49  | 0.03 |      | 0.52 |      |      |      |      |
| Uniform Delay, d <sub>1</sub>     | 10.0 | 10.3 |      |      | 11.6  | 8.9  |      | 16.5 |      |      |      |      |
| Progression Factor                | 0.67 | 0.68 |      |      | 0.76  | 0.69 |      | 0.56 |      |      |      |      |
| Incremental Delay, d <sub>2</sub> | 1.6  | 0.8  |      |      | 1.6   | 0.1  |      | 0.9  |      |      |      |      |
| Delay (s)                         | 8.4  | 7.8  |      |      | 10.4  | 6.2  |      | 10.1 |      |      |      |      |
| Level of Service                  | A    | A    |      |      | B     | A    |      | B    |      |      |      |      |
| Approach Delay (s)                |      | 7.9  |      |      | 9.9   |      |      | 10.1 |      |      | 0.0  |      |
| Approach LOS                      |      | A    |      |      | A     |      |      | B    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 9.6   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.50  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 59.5% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

CUMULATIVE NO PROJECT  
WITH SMART PLAN

AM Peak Hour

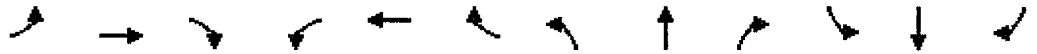
Signalized Intersections

(am6)



HCM Signalized Intersection Capacity Analysis  
 2004: L Street & 21th Street

7/11/2005

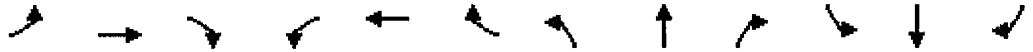


| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      |      | ↑↓    |      |      | ↑↑↑  |      |      |      |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0   |      |      | 4.0  |      |      |      |      |
| Lane Util. Factor      |      |      |      |      | 0.95  |      |      | 0.91 |      |      |      |      |
| Frt                    |      |      |      |      | 0.95  |      |      | 1.00 |      |      |      |      |
| Flt Protected          |      |      |      |      | 1.00  |      |      | 0.99 |      |      |      |      |
| Satd. Flow (prot)      |      |      |      |      | 3210  |      |      | 4872 |      |      |      |      |
| Flt Permitted          |      |      |      |      | 1.00  |      |      | 0.99 |      |      |      |      |
| Satd. Flow (perm)      |      |      |      |      | 3210  |      |      | 4872 |      |      |      |      |
| Volume (vph)           | 0    | 0    | 0    | 0    | 675   | 293  | 298  | 1362 | 0    | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 0    | 675   | 293  | 298  | 1362 | 0    | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 10    | 0    | 0    | 66   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 958   | 0    | 0    | 1594 | 0    | 0    | 0    | 0    |
| Parking (#/hr)         | 0    | 0    |      |      | 0     | 0    | 0    | 0    | 0    |      |      |      |
| Turn Type              |      |      |      |      |       |      | Perm |      |      |      |      |      |
| Protected Phases       |      |      |      |      | 6     |      |      | 8    |      |      |      |      |
| Permitted Phases       |      |      |      |      |       |      | 8    |      |      |      |      |      |
| Actuated Green, G (s)  |      |      |      |      | 21.0  |      |      | 23.0 |      |      |      |      |
| Effective Green, g (s) |      |      |      |      | 20.0  |      |      | 22.0 |      |      |      |      |
| Actuated g/C Ratio     |      |      |      |      | 0.40  |      |      | 0.44 |      |      |      |      |
| Clearance Time (s)     |      |      |      |      | 3.0   |      |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)     |      |      |      |      | 1284  |      |      | 2144 |      |      |      |      |
| v/s Ratio Prot         |      |      |      |      | c0.30 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      |      |      |       |      |      | 0.33 |      |      |      |      |
| v/c Ratio              |      |      |      |      | 0.75  |      |      | 0.74 |      |      |      |      |
| Uniform Delay, d1      |      |      |      |      | 12.8  |      |      | 11.7 |      |      |      |      |
| Progression Factor     |      |      |      |      | 0.36  |      |      | 1.00 |      |      |      |      |
| Incremental Delay, d2  |      |      |      |      | 3.3   |      |      | 2.4  |      |      |      |      |
| Delay (s)              |      |      |      |      | 8.0   |      |      | 14.0 |      |      |      |      |
| Level of Service       |      |      |      |      | A     |      |      | B    |      |      |      |      |
| Approach Delay (s)     |      | 0.0  |      |      | 8.0   |      |      | 14.0 |      |      | 0.0  |      |
| Approach LOS           |      | A    |      |      | A     |      |      | B    |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.8  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.75  |                      |     |
| Actuated Cycle Length (s)         | 50.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 67.1% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 2012: J Street & 21th Street

7/11/2005



| Movement                          | EBL                 | EBT  | EBR   | WBL  | WBT  | WBR  | NBL                  | NBT   | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|---------------------|------|-------|------|------|------|----------------------|-------|------|------|------|------|
| Lane Configurations               |                     | ↑↑↑  |       |      |      |      |                      | ↑↑↑   |      |      |      |      |
| Ideal Flow (vphpl)                | 1900                | 1900 | 1900  | 1900 | 1900 | 1900 | 1900                 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |                     | 4.0  |       |      |      |      |                      | 4.0   |      |      |      |      |
| Lane Util. Factor                 |                     | 0.91 |       |      |      |      |                      | 0.91  |      |      |      |      |
| Frt                               |                     | 1.00 |       |      |      |      |                      | 0.98  |      |      |      |      |
| Flt Protected                     |                     | 1.00 |       |      |      |      |                      | 1.00  |      |      |      |      |
| Satd. Flow (prot)                 |                     | 4914 |       |      |      |      |                      | 4797  |      |      |      |      |
| Flt Permitted                     |                     | 1.00 |       |      |      |      |                      | 1.00  |      |      |      |      |
| Satd. Flow (perm)                 |                     | 4914 |       |      |      |      |                      | 4797  |      |      |      |      |
| Volume (vph)                      | 7                   | 1023 | 0     | 0    | 0    | 0    | 0                    | 1295  | 249  | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00                | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00                 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 7                   | 1023 | 0     | 0    | 0    | 0    | 0                    | 1295  | 249  | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0                   | 1    | 0     | 0    | 0    | 0    | 0                    | 9     | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 0                   | 1029 | 0     | 0    | 0    | 0    | 0                    | 1535  | 0    | 0    | 0    | 0    |
| Parking (#/hr)                    | 0                   | 0    |       |      |      |      |                      | 0     | 0    |      |      |      |
| Turn Type                         | Perm                |      |       |      |      |      |                      |       |      |      |      |      |
| Protected Phases                  |                     | 2    |       |      |      |      |                      | 8     |      |      |      |      |
| Permitted Phases                  | 2                   |      |       |      |      |      |                      |       |      |      |      |      |
| Actuated Green, G (s)             |                     | 18.0 |       |      |      |      |                      | 26.0  |      |      |      |      |
| Effective Green, g (s)            |                     | 17.0 |       |      |      |      |                      | 25.0  |      |      |      |      |
| Actuated g/C Ratio                |                     | 0.34 |       |      |      |      |                      | 0.50  |      |      |      |      |
| Clearance Time (s)                |                     | 3.0  |       |      |      |      |                      | 3.0   |      |      |      |      |
| Lane Grp Cap (vph)                |                     | 1671 |       |      |      |      |                      | 2399  |      |      |      |      |
| v/s Ratio Prot                    |                     |      |       |      |      |      |                      | c0.32 |      |      |      |      |
| v/s Ratio Perm                    |                     | 0.21 |       |      |      |      |                      |       |      |      |      |      |
| v/c Ratio                         |                     | 0.62 |       |      |      |      |                      | 0.64  |      |      |      |      |
| Uniform Delay, d1                 |                     | 13.8 |       |      |      |      |                      | 9.2   |      |      |      |      |
| Progression Factor                |                     | 0.52 |       |      |      |      |                      | 0.32  |      |      |      |      |
| Incremental Delay, d2             |                     | 1.4  |       |      |      |      |                      | 0.8   |      |      |      |      |
| Delay (s)                         |                     | 8.7  |       |      |      |      |                      | 3.8   |      |      |      |      |
| Level of Service                  |                     | A    |       |      |      |      |                      | A     |      |      |      |      |
| Approach Delay (s)                |                     | 8.7  |       |      | 0.0  |      |                      | 3.8   |      |      | 0.0  |      |
| Approach LOS                      |                     | A    |       |      | A    |      |                      | A     |      |      | A    |      |
| <b>Intersection Summary</b>       |                     |      |       |      |      |      |                      |       |      |      |      |      |
| HCM Average Control Delay         |                     |      | 5.7   |      |      |      | HCM Level of Service |       | A    |      |      |      |
| HCM Volume to Capacity ratio      |                     |      | 0.63  |      |      |      |                      |       |      |      |      |      |
| Actuated Cycle Length (s)         |                     |      | 50.0  |      |      |      | Sum of lost time (s) |       | 8.0  |      |      |      |
| Intersection Capacity Utilization |                     |      | 57.1% |      |      |      | ICU Level of Service |       | B    |      |      |      |
| Analysis Period (min)             |                     |      | 15    |      |      |      |                      |       |      |      |      |      |
| c                                 | Critical Lane Group |      |       |      |      |      |                      |       |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
 2074: J Street & 19th Street

7/11/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT                  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |  |
|-----------------------------------|------|------|-------|------|----------------------|------|------|------|------|------|------|------|--|
| Lane Configurations               |      | ↑↑↑  |       |      |                      |      |      |      |      |      | ↑↑↑  |      |  |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |  |
| Total Lost time (s)               |      | 4.0  |       |      |                      |      |      |      |      |      | 4.0  |      |  |
| Lane Util. Factor                 |      | 0.91 |       |      |                      |      |      |      |      |      | 0.91 |      |  |
| Frt                               |      | 0.96 |       |      |                      |      |      |      |      |      | 1.00 |      |  |
| Flt Protected                     |      | 1.00 |       |      |                      |      |      |      |      |      | 0.99 |      |  |
| Satd. Flow (prot)                 |      | 4725 |       |      |                      |      |      |      |      |      | 4849 |      |  |
| Flt Permitted                     |      | 1.00 |       |      |                      |      |      |      |      |      | 0.99 |      |  |
| Satd. Flow (perm)                 |      | 4725 |       |      |                      |      |      |      |      |      | 4849 |      |  |
| Volume (vph)                      | 0    | 1012 | 352   | 0    | 0                    | 0    | 0    | 0    | 0    | 106  | 280  | 0    |  |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |  |
| Adj. Flow (vph)                   | 0    | 1012 | 352   | 0    | 0                    | 0    | 0    | 0    | 0    | 106  | 280  | 0    |  |
| RTOR Reduction (vph)              | 0    | 125  | 0     | 0    | 0                    | 0    | 0    | 0    | 0    | 0    | 35   | 0    |  |
| Lane Group Flow (vph)             | 0    | 1239 | 0     | 0    | 0                    | 0    | 0    | 0    | 0    | 0    | 351  | 0    |  |
| Parking (#/hr)                    |      | 0    | 0     |      |                      |      |      |      |      | 0    | 0    |      |  |
| Turn Type                         |      |      |       |      |                      |      |      |      |      | Perm |      |      |  |
| Protected Phases                  |      | 2    |       |      |                      |      |      |      |      |      | 4    |      |  |
| Permitted Phases                  |      |      |       |      |                      |      |      |      |      | 4    |      |      |  |
| Actuated Green, G (s)             |      | 24.0 |       |      |                      |      |      |      |      |      | 20.0 |      |  |
| Effective Green, g (s)            |      | 23.0 |       |      |                      |      |      |      |      |      | 19.0 |      |  |
| Actuated g/C Ratio                |      | 0.46 |       |      |                      |      |      |      |      |      | 0.38 |      |  |
| Clearance Time (s)                |      | 3.0  |       |      |                      |      |      |      |      |      | 3.0  |      |  |
| Lane Grp Cap (vph)                |      | 2174 |       |      |                      |      |      |      |      |      | 1843 |      |  |
| v/s Ratio Prot                    |      | 0.26 |       |      |                      |      |      |      |      |      |      |      |  |
| v/s Ratio Perm                    |      |      |       |      |                      |      |      |      |      |      | 0.07 |      |  |
| v/c Ratio                         |      | 0.57 |       |      |                      |      |      |      |      |      | 0.19 |      |  |
| Uniform Delay, d1                 |      | 9.9  |       |      |                      |      |      |      |      |      | 10.4 |      |  |
| Progression Factor                |      | 1.00 |       |      |                      |      |      |      |      |      | 1.00 |      |  |
| Incremental Delay, d2             |      | 1.1  |       |      |                      |      |      |      |      |      | 0.2  |      |  |
| Delay (s)                         |      | 11.0 |       |      |                      |      |      |      |      |      | 10.6 |      |  |
| Level of Service                  |      | B    |       |      |                      |      |      |      |      |      | B    |      |  |
| Approach Delay (s)                |      | 11.0 |       |      | 0.0                  |      |      | 0.0  |      |      | 10.6 |      |  |
| Approach LOS                      |      | B    |       |      | A                    |      |      | A    |      |      | B    |      |  |
| <b>Intersection Summary</b>       |      |      |       |      |                      |      |      |      |      |      |      |      |  |
| HCM Average Control Delay         |      |      | 10.9  |      | HCM Level of Service |      |      |      |      |      | B    |      |  |
| HCM Volume to Capacity ratio      |      |      | 0.40  |      |                      |      |      |      |      |      |      |      |  |
| Actuated Cycle Length (s)         |      |      | 50.0  |      | Sum of lost time (s) |      |      |      |      |      | 8.0  |      |  |
| Intersection Capacity Utilization |      |      | 41.6% |      | ICU Level of Service |      |      |      |      |      | A    |      |  |
| Analysis Period (min)             |      |      | 15    |      |                      |      |      |      |      |      |      |      |  |
| c Critical Lane Group             |      |      |       |      |                      |      |      |      |      |      |      |      |  |

HCM Signalized Intersection Capacity Analysis  
 2088: L Street & 29th Street

7/11/2005



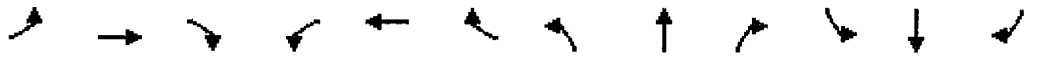
| Movement                          | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|-----------------------------------|------|------|------|------|-------|------|------|------|------|------|-------|------|
| Lane Configurations               |      |      |      | ↖    | ↗     |      |      |      |      |      | ↖↗    | ↖↗   |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)               |      |      |      | 4.0  | 4.0   |      |      |      |      |      | 4.0   | 4.0  |
| Lane Util. Factor                 |      |      |      | 1.00 | 0.95  |      |      |      |      |      | 0.86  | 0.86 |
| Fr <sub>t</sub>                   |      |      |      | 1.00 | 1.00  |      |      |      |      |      | 1.00  | 0.85 |
| Fl <sub>t</sub> Protected         |      |      |      | 0.95 | 1.00  |      |      |      |      |      | 1.00  | 1.00 |
| Satd. Flow (prot)                 |      |      |      | 1770 | 3539  |      |      |      |      |      | 4646  | 1226 |
| Fl <sub>t</sub> Permitted         |      |      |      | 0.95 | 1.00  |      |      |      |      |      | 1.00  | 1.00 |
| Satd. Flow (perm)                 |      |      |      | 1770 | 3539  |      |      |      |      |      | 4646  | 1226 |
| Volume (vph)                      | 0    | 0    | 0    | 156  | 583   | 0    | 0    | 0    | 0    | 0    | 882   | 239  |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0    | 156  | 583   | 0    | 0    | 0    | 0    | 0    | 882   | 239  |
| RTOR Reduction (vph)              | 0    | 0    | 0    | 49   | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 102  |
| Lane Group Flow (vph)             | 0    | 0    | 0    | 107  | 583   | 0    | 0    | 0    | 0    | 0    | 882   | 137  |
| Parking (#/hr)                    |      |      | 0    |      |       |      |      |      |      |      | 0     | 0    |
| Turn Type                         |      |      |      | Perm |       |      |      |      |      |      |       | Perm |
| Protected Phases                  |      |      |      |      | 6     |      |      |      |      |      | 4     |      |
| Permitted Phases                  |      |      |      | 6    |       |      |      |      |      |      |       | 4    |
| Actuated Green, G (s)             |      |      |      | 36.0 | 36.0  |      |      |      |      |      | 38.0  | 38.0 |
| Effective Green, g (s)            |      |      |      | 35.0 | 35.0  |      |      |      |      |      | 37.0  | 37.0 |
| Actuated g/C Ratio                |      |      |      | 0.44 | 0.44  |      |      |      |      |      | 0.46  | 0.46 |
| Clearance Time (s)                |      |      |      | 3.0  | 3.0   |      |      |      |      |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)                |      |      |      | 774  | 1548  |      |      |      |      |      | 2149  | 567  |
| v/s Ratio Prot                    |      |      |      |      | c0.16 |      |      |      |      |      | c0.19 |      |
| v/s Ratio Perm                    |      |      |      | 0.06 |       |      |      |      |      |      |       | 0.11 |
| v/c Ratio                         |      |      |      | 0.14 | 0.38  |      |      |      |      |      | 0.41  | 0.24 |
| Uniform Delay, d <sub>1</sub>     |      |      |      | 13.5 | 15.2  |      |      |      |      |      | 14.3  | 13.0 |
| Progression Factor                |      |      |      | 0.69 | 0.75  |      |      |      |      |      | 0.68  | 0.07 |
| Incremental Delay, d <sub>2</sub> |      |      |      | 0.4  | 0.7   |      |      |      |      |      | 0.5   | 0.9  |
| Delay (s)                         |      |      |      | 9.7  | 12.0  |      |      |      |      |      | 10.2  | 1.7  |
| Level of Service                  |      |      |      | A    | B     |      |      |      |      |      | B     | A    |
| Approach Delay (s)                |      | 0.0  |      |      | 11.5  |      |      | 0.0  |      |      | 8.4   |      |
| Approach LOS                      |      | A    |      |      | B     |      |      | A    |      |      | A     |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 9.7   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.39  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 41.6% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
 2239: L Street & Alhambra

7/11/2005



| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations       |      |      |      |      | ↕    |      |      | ↕    |      |      | ↕    | ↗    |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |      |      |      |      | 4.0  |      |      | 4.0  |      |      | 4.0  | 4.0  |
| Lane Util. Factor         |      |      |      |      | 1.00 |      |      | 1.00 |      |      | 1.00 | 1.00 |
| Fr <sub>t</sub>           |      |      |      |      | 0.99 |      |      | 0.96 |      |      | 1.00 | 0.85 |
| Fl <sub>t</sub> Protected |      |      |      |      | 1.00 |      |      | 0.99 |      |      | 0.99 | 1.00 |
| Satd. Flow (prot)         |      |      |      |      | 1646 |      |      | 1595 |      |      | 1851 | 1425 |
| Fl <sub>t</sub> Permitted |      |      |      |      | 1.00 |      |      | 0.82 |      |      | 0.84 | 1.00 |
| Satd. Flow (perm)         |      |      |      |      | 1646 |      |      | 1314 |      |      | 1571 | 1425 |
| Volume (vph)              | 0    | 0    | 0    | 12   | 122  | 16   | 137  | 417  | 238  | 71   | 480  | 351  |
| Peak-hour factor, PHF     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 0    | 0    | 0    | 12   | 122  | 16   | 137  | 417  | 238  | 71   | 480  | 351  |
| RTOR Reduction (vph)      | 0    | 0    | 0    | 0    | 6    | 0    | 0    | 19   | 0    | 0    | 0    | 105  |
| Lane Group Flow (vph)     | 0    | 0    | 0    | 0    | 144  | 0    | 0    | 773  | 0    | 0    | 551  | 246  |
| Parking (#/hr)            |      |      |      | 0    | 0    | 0    | 0    | 0    | 0    |      |      | 0    |
| Turn Type                 |      |      |      | Perm |      |      | Perm |      |      | Perm |      |      |
| Protected Phases          |      |      |      |      | 6    |      |      | 8    |      |      | 4    |      |
| Permitted Phases          |      |      |      | 6    |      |      | 8    |      |      | 4    |      | 4    |
| Actuated Green, G (s)     |      |      |      |      | 17.0 |      |      | 57.0 |      |      | 57.0 | 57.0 |
| Effective Green, g (s)    |      |      |      |      | 16.0 |      |      | 56.0 |      |      | 56.0 | 56.0 |
| Actuated g/C Ratio        |      |      |      |      | 0.20 |      |      | 0.70 |      |      | 0.70 | 0.70 |
| Clearance Time (s)        |      |      |      |      | 3.0  |      |      | 3.0  |      |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)        |      |      |      |      | 329  |      |      | 920  |      |      | 1100 | 998  |
| v/s Ratio Prot            |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm            |      |      |      |      | 0.09 |      |      | 0.59 |      |      | 0.35 | 0.17 |
| v/c Ratio                 |      |      |      |      | 0.44 |      |      | 0.84 |      |      | 0.50 | 0.25 |
| Uniform Delay, d1         |      |      |      |      | 28.1 |      |      | 8.7  |      |      | 5.5  | 4.3  |
| Progression Factor        |      |      |      |      | 1.00 |      |      | 1.00 |      |      | 0.63 | 0.07 |
| Incremental Delay, d2     |      |      |      |      | 4.2  |      |      | 3.6  |      |      | 1.5  | 0.5  |
| Delay (s)                 |      |      |      |      | 32.3 |      |      | 12.3 |      |      | 5.0  | 0.8  |
| Level of Service          |      |      |      |      | C    |      |      | B    |      |      | A    | A    |
| Approach Delay (s)        |      | 0.0  |      |      | 32.3 |      |      | 12.3 |      |      | 3.4  |      |
| Approach LOS              |      | A    |      |      | C    |      |      | B    |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 9.6   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.75  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 91.3% | ICU Level of Service | F   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3426: L Street & 19th Street

7/11/2005



| Movement                          | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations               |      |      |      |      | ↑↑   |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      |      |      |      | 4.0  |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor                 |      |      |      |      | 0.95 |      |      |      |      |      | 0.91 |      |
| Fr <sub>t</sub>                   |      |      |      |      | 1.00 |      |      |      |      |      | 0.99 |      |
| Fl <sub>t</sub> Protected         |      |      |      |      | 1.00 |      |      |      |      |      | 1.00 |      |
| Satd. Flow (prot)                 |      |      |      |      | 3350 |      |      |      |      |      | 4874 |      |
| Fl <sub>t</sub> Permitted         |      |      |      |      | 1.00 |      |      |      |      |      | 1.00 |      |
| Satd. Flow (perm)                 |      |      |      |      | 3350 |      |      |      |      |      | 4874 |      |
| Volume (vph)                      | 0    | 0    | 0    | 70   | 887  | 0    | 0    | 0    | 0    | 0    | 579  | 35   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0    | 70   | 887  | 0    | 0    | 0    | 0    | 0    | 579  | 35   |
| RTOR Reduction (vph)              | 0    | 0    | 0    | 0    | 11   | 0    | 0    | 0    | 0    | 0    | 13   | 0    |
| Lane Group Flow (vph)             | 0    | 0    | 0    | 0    | 946  | 0    | 0    | 0    | 0    | 0    | 601  | 0    |
| Parking (#/hr)                    |      | 0    | 0    | 0    | 0    |      |      |      |      | 0    | 0    | 0    |
| Turn Type                         |      |      |      |      | Perm |      |      |      |      |      |      |      |
| Protected Phases                  |      |      |      |      | 6    |      |      |      |      |      | 4    |      |
| Permitted Phases                  |      |      |      | 6    |      |      |      |      |      |      |      |      |
| Actuated Green, G (s)             |      |      |      |      | 25.0 |      |      |      |      |      | 19.0 |      |
| Effective Green, g (s)            |      |      |      |      | 24.0 |      |      |      |      |      | 18.0 |      |
| Actuated g/C Ratio                |      |      |      |      | 0.48 |      |      |      |      |      | 0.36 |      |
| Clearance Time (s)                |      |      |      |      | 3.0  |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |      |      |      |      | 1608 |      |      |      |      |      | 1755 |      |
| v/s Ratio Prot                    |      |      |      |      |      |      |      |      |      |      | 0.12 |      |
| v/s Ratio Perm                    |      |      |      |      | 0.28 |      |      |      |      |      |      |      |
| v/c Ratio                         |      |      |      |      | 0.59 |      |      |      |      |      | 0.34 |      |
| Uniform Delay, d <sub>1</sub>     |      |      |      |      | 9.4  |      |      |      |      |      | 11.7 |      |
| Progression Factor                |      |      |      |      | 0.49 |      |      |      |      |      | 0.84 |      |
| Incremental Delay, d <sub>2</sub> |      |      |      |      | 1.0  |      |      |      |      |      | 0.5  |      |
| Delay (s)                         |      |      |      |      | 5.6  |      |      |      |      |      | 10.3 |      |
| Level of Service                  |      |      |      |      | A    |      |      |      |      |      | B    |      |
| Approach Delay (s)                |      | 0.0  |      |      | 5.6  |      |      | 0.0  |      |      | 10.3 |      |
| Approach LOS                      |      | A    |      |      | A    |      |      | A    |      |      | B    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 7.5   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.48  |                      |     |
| Actuated Cycle Length (s)         | 50.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 45.2% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3427: L Street & 26th St

7/11/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT  | WBR  | NBL  | NBT                  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|-------|------|------|------|------|----------------------|------|------|------|------|
| Lane Configurations               |      |      |       |      | ↕↕   |      |      | ↕                    |      |      | ↕    |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      |      |       |      | 4.0  |      |      | 4.0                  |      |      | 4.0  |      |
| Lane Util. Factor                 |      |      |       |      | 0.95 |      |      | 1.00                 |      |      | 1.00 |      |
| Frt                               |      |      |       |      | 0.99 |      |      | 1.00                 |      |      | 0.94 |      |
| Flt Protected                     |      |      |       |      | 1.00 |      |      | 0.98                 |      |      | 1.00 |      |
| Satd. Flow (prot)                 |      |      |       |      | 3342 |      |      | 1646                 |      |      | 1582 |      |
| Flt Permitted                     |      |      |       |      | 1.00 |      |      | 0.92                 |      |      | 1.00 |      |
| Satd. Flow (perm)                 |      |      |       |      | 3342 |      |      | 1544                 |      |      | 1582 |      |
| Volume (vph)                      | 0    | 0    | 0     | 16   | 954  | 36   | 21   | 36                   | 0    | 0    | 42   | 30   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 16   | 954  | 36   | 21   | 36                   | 0    | 0    | 42   | 30   |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 0    | 6    | 0    | 0    | 0                    | 0    | 0    | 20   | 0    |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 0    | 1001 | 0    | 0    | 57                   | 0    | 0    | 52   | 0    |
| Parking (#/hr)                    |      |      |       | 0    | 0    | 0    | 0    | 0                    |      |      | 0    | 0    |
| Turn Type                         |      |      |       | Perm |      | Perm |      |                      |      |      |      |      |
| Protected Phases                  |      |      |       |      | 8    |      |      | 2                    |      |      | 6    |      |
| Permitted Phases                  |      |      |       | 8    |      |      | 2    |                      |      |      |      |      |
| Actuated Green, G (s)             |      |      |       |      | 26.0 |      |      | 18.0                 |      |      | 18.0 |      |
| Effective Green, g (s)            |      |      |       |      | 25.0 |      |      | 17.0                 |      |      | 17.0 |      |
| Actuated g/C Ratio                |      |      |       |      | 0.50 |      |      | 0.34                 |      |      | 0.34 |      |
| Clearance Time (s)                |      |      |       |      | 3.0  |      |      | 3.0                  |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |      |      |       |      | 1671 |      |      | 525                  |      |      | 538  |      |
| v/s Ratio Prot                    |      |      |       |      |      |      |      |                      |      |      | 0.03 |      |
| v/s Ratio Perm                    |      |      |       |      | 0.30 |      |      | 0.04                 |      |      |      |      |
| v/c Ratio                         |      |      |       |      | 0.60 |      |      | 0.11                 |      |      | 0.10 |      |
| Uniform Delay, d1                 |      |      |       |      | 8.9  |      |      | 11.3                 |      |      | 11.3 |      |
| Progression Factor                |      |      |       |      | 1.00 |      |      | 0.70                 |      |      | 1.00 |      |
| Incremental Delay, d2             |      |      |       |      | 1.6  |      |      | 0.4                  |      |      | 0.4  |      |
| Delay (s)                         |      |      |       |      | 10.5 |      |      | 8.3                  |      |      | 11.6 |      |
| Level of Service                  |      |      |       |      | B    |      |      | A                    |      |      | B    |      |
| Approach Delay (s)                |      | 0.0  |       |      | 10.5 |      |      | 8.3                  |      |      | 11.6 |      |
| Approach LOS                      |      | A    |       |      | B    |      |      | A                    |      |      | B    |      |
| <b>Intersection Summary</b>       |      |      |       |      |      |      |      |                      |      |      |      |      |
| HCM Average Control Delay         |      |      | 10.5  |      |      |      |      | HCM Level of Service |      |      | B    |      |
| HCM Volume to Capacity ratio      |      |      | 0.40  |      |      |      |      |                      |      |      |      |      |
| Actuated Cycle Length (s)         |      |      | 50.0  |      |      |      |      | Sum of lost time (s) |      |      | 8.0  |      |
| Intersection Capacity Utilization |      |      | 44.4% |      |      |      |      | ICU Level of Service |      |      | A    |      |
| Analysis Period (min)             |      |      | 15    |      |      |      |      |                      |      |      |      |      |
| c Critical Lane Group             |      |      |       |      |      |      |      |                      |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
 3428: J Street & 29th St off ramp

7/11/2005



| Movement                          | EBT   | EBR  | SBL   | SBT   | SWL2  | SWL   |
|-----------------------------------|-------|------|-------|-------|-------|-------|
| Lane Configurations               | ↑↑↑   |      |       | ↑↑↑   |       | ↑↑    |
| Ideal Flow (vphpl)                | 1900  | 1900 | 1900  | 1900  | 1900  | 1900  |
| Total Lost time (s)               | 4.0   |      |       | 4.0   |       | 4.0   |
| Lane Util. Factor                 | 0.91  |      |       | 0.91  |       | 0.97  |
| Fr <sub>t</sub>                   | 0.96  |      |       | 1.00  |       | 1.00  |
| Fl <sub>t</sub> Protected         | 1.00  |      |       | 0.99  |       | 0.95  |
| Satd. Flow (prot)                 | 4727  |      |       | 4891  |       | 3433  |
| Fl <sub>t</sub> Permitted         | 1.00  |      |       | 0.99  |       | 0.95  |
| Satd. Flow (perm)                 | 4727  |      |       | 4891  |       | 3433  |
| Volume (vph)                      | 900   | 310  | 34    | 295   | 424   | 577   |
| Peak-hour factor, PHF             | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)                   | 900   | 310  | 34    | 295   | 424   | 577   |
| RTOR Reduction (vph)              | 78    | 0    | 0     | 0     | 0     | 166   |
| Lane Group Flow (vph)             | 1132  | 0    | 0     | 329   | 0     | 835   |
| Parking (#/hr)                    | 0     | 0    |       | 0     |       |       |
| Turn Type                         |       |      | Split |       | Split |       |
| Protected Phases                  | 2     |      | 8     | 8     | 4     | 4     |
| Permitted Phases                  |       |      |       |       |       |       |
| Actuated Green, G (s)             | 26.0  |      |       | 17.0  |       | 28.0  |
| Effective Green, g (s)            | 25.0  |      |       | 16.0  |       | 27.0  |
| Actuated g/C Ratio                | 0.31  |      |       | 0.20  |       | 0.34  |
| Clearance Time (s)                | 3.0   |      |       | 3.0   |       | 3.0   |
| Lane Grp Cap (vph)                | 1477  |      |       | 978   |       | 1159  |
| v/s Ratio Prof                    | c0.24 |      |       | c0.07 |       | c0.24 |
| v/s Ratio Perm                    |       |      |       |       |       |       |
| v/c Ratio                         | 0.77  |      |       | 0.34  |       | 0.72  |
| Uniform Delay, d <sub>1</sub>     | 24.9  |      |       | 27.4  |       | 23.2  |
| Progression Factor                | 0.53  |      |       | 1.00  |       | 1.00  |
| Incremental Delay, d <sub>2</sub> | 3.5   |      |       | 0.9   |       | 3.9   |
| Delay (s)                         | 16.7  |      |       | 28.4  |       | 27.1  |
| Level of Service                  | B     |      |       | C     |       | C     |
| Approach Delay (s)                | 16.7  |      |       | 28.4  |       | 27.1  |
| Approach LOS                      | B     |      |       | C     |       | C     |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 22.3  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.65  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 69.3% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3429: J Street & Alhambra

7/11/2005



| Movement                          | EBL   | EBT   | EBR  | WBL   | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|-----------------------------------|-------|-------|------|-------|------|------|------|------|------|------|-------|------|
| Lane Configurations               | ↖     | ↕     |      | ↖     | ↕    | ↗    |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)               | 4.0   | 4.0   |      | 4.0   | 4.0  | 4.0  |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor                 | 1.00  | 0.95  |      | 0.95  | 0.95 | 1.00 |      | 0.95 |      |      | 0.95  |      |
| Fr <sub>t</sub>                   | 1.00  | 0.97  |      | 1.00  | 1.00 | 0.85 |      | 0.95 |      |      | 1.00  |      |
| Fl <sub>t</sub> Protected         | 0.95  | 1.00  |      | 0.95  | 0.95 | 1.00 |      | 1.00 |      |      | 1.00  |      |
| Satd. Flow (prot)                 | 1770  | 3260  |      | 1681  | 1681 | 1425 |      | 3197 |      |      | 3356  |      |
| Fl <sub>t</sub> Permitted         | 0.95  | 1.00  |      | 0.95  | 0.95 | 1.00 |      | 1.00 |      |      | 0.94  |      |
| Satd. Flow (perm)                 | 1770  | 3260  |      | 1681  | 1681 | 1425 |      | 3197 |      |      | 3153  |      |
| Volume (vph)                      | 153   | 901   | 228  | 601   | 0    | 179  | 0    | 246  | 120  | 12   | 322   | 0    |
| Peak-hour factor, PHF             | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)                   | 153   | 901   | 228  | 601   | 0    | 179  | 0    | 246  | 120  | 12   | 322   | 0    |
| RTOR Reduction (vph)              | 0     | 28    | 0    | 0     | 0    | 136  | 0    | 74   | 0    | 0    | 0     | 0    |
| Lane Group Flow (vph)             | 153   | 1101  | 0    | 301   | 300  | 43   | 0    | 292  | 0    | 0    | 334   | 0    |
| Parking (#/hr)                    |       | 0     | 0    |       |      | 0    |      | 0    | 0    |      | 0     |      |
| Turn Type                         | Split |       |      | Split |      |      | Perm |      |      | Perm |       |      |
| Protected Phases                  | 2     | 2     |      | 6     | 6    |      |      | 8    |      |      |       | 4    |
| Permitted Phases                  |       |       |      |       |      | 6    |      |      |      | 4    |       |      |
| Actuated Green, G (s)             | 34.0  | 34.0  |      | 20.0  | 20.0 | 20.0 |      | 17.0 |      |      | 17.0  |      |
| Effective Green, g (s)            | 33.0  | 33.0  |      | 19.0  | 19.0 | 19.0 |      | 16.0 |      |      | 16.0  |      |
| Actuated g/C Ratio                | 0.41  | 0.41  |      | 0.24  | 0.24 | 0.24 |      | 0.20 |      |      | 0.20  |      |
| Clearance Time (s)                | 3.0   | 3.0   |      | 3.0   | 3.0  | 3.0  |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)                | 730   | 1345  |      | 399   | 399  | 338  |      | 639  |      |      | 631   |      |
| v/s Ratio Prot                    | 0.09  | c0.34 |      | c0.18 | 0.18 |      |      | 0.09 |      |      |       |      |
| v/s Ratio Perm                    |       |       |      |       |      | 0.03 |      |      |      |      | c0.11 |      |
| v/c Ratio                         | 0.21  | 0.82  |      | 0.75  | 0.75 | 0.13 |      | 0.46 |      |      | 0.53  |      |
| Uniform Delay, d <sub>1</sub>     | 15.1  | 20.8  |      | 28.3  | 28.3 | 24.0 |      | 28.2 |      |      | 28.6  |      |
| Progression Factor                | 0.59  | 0.49  |      | 1.00  | 1.00 | 1.00 |      | 0.76 |      |      | 1.00  |      |
| Incremental Delay, d <sub>2</sub> | 0.6   | 5.5   |      | 12.5  | 12.3 | 0.8  |      | 2.2  |      |      | 3.2   |      |
| Delay (s)                         | 9.6   | 15.7  |      | 40.8  | 40.6 | 24.7 |      | 23.6 |      |      | 31.8  |      |
| Level of Service                  | A     | B     |      | D     | D    | C    |      | C    |      |      | C     |      |
| Approach Delay (s)                |       | 15.0  |      |       | 37.0 |      |      | 23.6 |      |      | 31.8  |      |
| Approach LOS                      |       | B     |      |       | D    |      |      | C    |      |      | C     |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 24.4  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.73  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 76.5% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3435: N Street & 29th Street

7/11/2005



| Movement                          | EBT   | EBR  | EBR2 | WBL2  | WBL   | WBT   | SBL2 | SBL   | SBT  | SBR  |
|-----------------------------------|-------|------|------|-------|-------|-------|------|-------|------|------|
| Lane Configurations               | ↑     | ↔    |      |       | ↔     | ↑     |      | ↔     | ↑↔   |      |
| Ideal Flow (vphpl)                | 1900  | 1900 | 1900 | 1900  | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)               | 4.0   | 4.0  |      |       | 4.0   | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor                 | 1.00  | 1.00 |      |       | 0.95  | 0.95  |      | 0.97  | 0.95 |      |
| Fr <sub>t</sub>                   | 1.00  | 0.85 |      |       | 1.00  | 1.00  |      | 1.00  | 1.00 |      |
| Fl <sub>t</sub> Protected         | 1.00  | 1.00 |      |       | 0.95  | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)                 | 1676  | 1425 |      |       | 1681  | 1770  |      | 3433  | 3356 |      |
| Fl <sub>t</sub> Permitted         | 1.00  | 1.00 |      |       | 0.95  | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)                 | 1676  | 1425 |      |       | 1681  | 1770  |      | 3433  | 3356 |      |
| Volume (vph)                      | 242   | 180  | 29   | 151   | 110   | 385   | 82   | 732   | 323  | 4    |
| Peak-hour factor, PHF             | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 242   | 180  | 29   | 151   | 110   | 385   | 82   | 732   | 323  | 4    |
| RTOR Reduction (vph)              | 0     | 7    | 0    | 0     | 0     | 0     | 0    | 0     | 1    | 0    |
| Lane Group Flow (vph)             | 242   | 202  | 0    | 0     | 261   | 385   | 0    | 814   | 326  | 0    |
| Parking (#/hr)                    | 0     | 0    | 0    |       |       |       |      |       | 0    |      |
| Turn Type                         |       | Perm |      | Split | Split |       | Perm | Perm  |      |      |
| Protected Phases                  | 4     |      |      | 8     | 8     | 8     |      |       | 6    |      |
| Permitted Phases                  |       | 4    |      |       |       |       | 6    | 6     |      |      |
| Actuated Green, G (s)             | 19.0  | 19.0 |      |       | 26.0  | 26.0  |      | 26.0  | 26.0 |      |
| Effective Green, g (s)            | 18.0  | 18.0 |      |       | 25.0  | 25.0  |      | 25.0  | 25.0 |      |
| Actuated g/C Ratio                | 0.22  | 0.22 |      |       | 0.31  | 0.31  |      | 0.31  | 0.31 |      |
| Clearance Time (s)                | 3.0   | 3.0  |      |       | 3.0   | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)                | 377   | 321  |      |       | 525   | 553   |      | 1073  | 1049 |      |
| v/s Ratio Prot                    | c0.14 |      |      |       | 0.16  | c0.22 |      |       | 0.10 |      |
| v/s Ratio Perm                    |       | 0.14 |      |       |       |       |      | c0.24 |      |      |
| v/c Ratio                         | 0.64  | 0.63 |      |       | 0.50  | 0.70  |      | 0.76  | 0.31 |      |
| Uniform Delay, d <sub>1</sub>     | 28.1  | 28.0 |      |       | 22.4  | 24.2  |      | 24.8  | 20.9 |      |
| Progression Factor                | 1.03  | 1.03 |      |       | 0.65  | 0.68  |      | 0.71  | 0.66 |      |
| Incremental Delay, d <sub>2</sub> | 8.0   | 8.9  |      |       | 2.0   | 4.3   |      | 4.6   | 0.7  |      |
| Delay (s)                         | 36.9  | 37.6 |      |       | 16.5  | 20.9  |      | 22.3  | 14.5 |      |
| Level of Service                  | D     | D    |      |       | B     | C     |      | C     | B    |      |
| Approach Delay (s)                | 37.2  |      |      |       |       | 19.1  |      |       | 20.1 |      |
| Approach LOS                      | D     |      |      |       |       | B     |      |       | C    |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 23.2  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.70  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 66.4% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3436: Capitol & Alhambra

7/11/2005



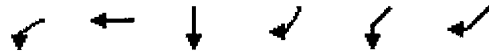
| Movement                  | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL  | NBT  | NBR  | SBL   | SBT  | SBR  |
|---------------------------|-------|-------|------|-------|-------|------|------|------|------|-------|------|------|
| Lane Configurations       |       | ↔↔    |      |       | ↔↔    |      | ↖    | ↗    | ↖    | ↗     | ↖    | ↗    |
| Ideal Flow (vphpl)        | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)       |       | 4.0   |      |       | 4.0   |      | 4.0  | 4.0  | 4.0  | 4.0   | 4.0  | 4.0  |
| Lane Util. Factor         |       | 0.95  |      |       | 0.95  |      | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Fr <sub>t</sub>           |       | 0.98  |      |       | 0.97  |      | 1.00 | 1.00 | 0.85 | 1.00  | 1.00 | 0.85 |
| Fl <sub>t</sub> Protected |       | 0.99  |      |       | 1.00  |      | 0.95 | 1.00 | 1.00 | 0.95  | 1.00 | 1.00 |
| Satd. Flow (prot)         |       | 3277  |      |       | 3261  |      | 1593 | 1676 | 1425 | 1593  | 1676 | 1425 |
| Fl <sub>t</sub> Permitted |       | 0.99  |      |       | 1.00  |      | 0.36 | 1.00 | 1.00 | 0.14  | 1.00 | 1.00 |
| Satd. Flow (perm)         |       | 3277  |      |       | 3261  |      | 599  | 1676 | 1425 | 243   | 1676 | 1425 |
| Volume (vph)              | 65    | 304   | 50   | 29    | 729   | 179  | 51   | 587  | 103  | 88    | 390  | 50   |
| Peak-hour factor, PHF     | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)           | 65    | 304   | 50   | 29    | 729   | 179  | 51   | 587  | 103  | 88    | 390  | 50   |
| RTOR Reduction (vph)      | 0     | 13    | 0    | 0     | 25    | 0    | 0    | 0    | 39   | 0     | 0    | 29   |
| Lane Group Flow (vph)     | 0     | 406   | 0    | 0     | 912   | 0    | 51   | 587  | 64   | 88    | 390  | 21   |
| Parking (#/hr)            | 0     | 0     | 0    | 0     | 0     | 0    | 0    | 0    | 0    | 0     | 0    | 0    |
| Turn Type                 | Split |       |      | Split |       |      | Perm |      |      | Perm  | Perm | Perm |
| Protected Phases          | 4     | 4     |      | 8     | 8     |      |      | 2    |      |       |      | 6    |
| Permitted Phases          |       |       |      |       |       |      | 2    |      | 2    | 6     |      | 6    |
| Actuated Green, G (s)     |       | 17.0  |      |       | 23.0  |      | 31.0 | 31.0 | 31.0 | 31.0  | 31.0 | 31.0 |
| Effective Green, g (s)    |       | 16.0  |      |       | 22.0  |      | 30.0 | 30.0 | 30.0 | 30.0  | 30.0 | 30.0 |
| Actuated g/C Ratio        |       | 0.20  |      |       | 0.28  |      | 0.38 | 0.38 | 0.38 | 0.38  | 0.38 | 0.38 |
| Clearance Time (s)        |       | 3.0   |      |       | 3.0   |      | 3.0  | 3.0  | 3.0  | 3.0   | 3.0  | 3.0  |
| Lane Grp Cap (vph)        |       | 655   |      |       | 897   |      | 225  | 629  | 534  | 91    | 629  | 534  |
| v/s Ratio Prot            |       | c0.12 |      |       | c0.28 |      |      | 0.35 |      |       |      | 0.23 |
| v/s Ratio Perm            |       |       |      |       |       |      | 0.09 |      | 0.04 | c0.36 |      | 0.01 |
| v/c Ratio                 |       | 0.62  |      |       | 1.02  |      | 0.23 | 0.93 | 0.12 | 0.97  | 0.62 | 0.04 |
| Uniform Delay, d1         |       | 29.2  |      |       | 29.0  |      | 17.1 | 24.0 | 16.4 | 24.5  | 20.4 | 15.9 |
| Progression Factor        |       | 0.97  |      |       | 1.00  |      | 0.70 | 0.68 | 0.51 | 0.71  | 0.70 | 0.49 |
| Incremental Delay, d2     |       | 4.2   |      |       | 34.2  |      | 0.9  | 11.5 | 0.2  | 80.9  | 4.1  | 0.1  |
| Delay (s)                 |       | 32.6  |      |       | 63.2  |      | 12.9 | 27.9 | 8.5  | 98.3  | 18.3 | 7.9  |
| Level of Service          |       | C     |      |       | E     |      | B    | C    | A    | F     | B    | A    |
| Approach Delay (s)        |       | 32.6  |      |       | 63.2  |      |      | 24.2 |      |       | 30.6 |      |
| Approach LOS              |       | C     |      |       | E     |      |      | C    |      |       | C    |      |

**Intersection Summary**

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 40.8  | HCM Level of Service | D    |
| HCM Volume to Capacity ratio      | 0.90  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 87.7% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3437: P Street & 29th St off ramp

7/11/2005



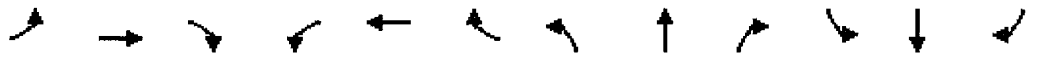
| Movement               | WBL  | WBT   | SBT   | SBR  | SWL   | SWR  |
|------------------------|------|-------|-------|------|-------|------|
| Lane Configurations    | ↙    | ↑↑    | ↑↑↑   |      | ↘↘    | ↗    |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900  | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0  | 4.0   | 4.0   |      | 4.0   | 4.0  |
| Lane Util. Factor      | 1.00 | 0.95  | 0.91  |      | 0.97  | 0.91 |
| Frt                    | 1.00 | 1.00  | 0.95  |      | 0.98  | 0.85 |
| Flt Protected          | 0.95 | 1.00  | 1.00  |      | 0.96  | 1.00 |
| Satd. Flow (prot)      | 1593 | 3362  | 4675  |      | 3395  | 1441 |
| Flt Permitted          | 0.95 | 1.00  | 1.00  |      | 0.96  | 1.00 |
| Satd. Flow (perm)      | 1593 | 3362  | 4675  |      | 3395  | 1441 |
| Volume (vph)           | 81   | 728   | 289   | 140  | 539   | 343  |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 81   | 728   | 289   | 140  | 539   | 343  |
| RTOR Reduction (vph)   | 56   | 0     | 109   | 0    | 0     | 0    |
| Lane Group Flow (vph)  | 25   | 728   | 321   | 0    | 621   | 261  |
| Parking (#/hr)         | 0    | 0     | 0     | 0    |       |      |
| Turn Type              | Perm |       |       |      | Perm  |      |
| Protected Phases       |      | 6     | 7     |      | 8     |      |
| Permitted Phases       | 6    |       |       |      |       | 8    |
| Actuated Green, G (s)  | 26.0 | 26.0  | 19.0  |      | 26.0  | 26.0 |
| Effective Green, g (s) | 25.0 | 25.0  | 18.0  |      | 25.0  | 25.0 |
| Actuated g/C Ratio     | 0.31 | 0.31  | 0.22  |      | 0.31  | 0.31 |
| Clearance Time (s)     | 3.0  | 3.0   | 3.0   |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)     | 498  | 1051  | 1052  |      | 1061  | 450  |
| v/s Ratio Prot         |      | c0.22 | c0.07 |      | c0.18 |      |
| v/s Ratio Perm         | 0.02 |       |       |      |       | 0.18 |
| v/c Ratio              | 0.05 | 0.69  | 0.30  |      | 0.59  | 0.58 |
| Uniform Delay, d1      | 19.2 | 24.1  | 25.8  |      | 23.1  | 23.1 |
| Progression Factor     | 0.28 | 0.57  | 0.28  |      | 1.00  | 1.00 |
| Incremental Delay, d2  | 0.2  | 3.4   | 0.7   |      | 2.4   | 5.4  |
| Delay (s)              | 5.6  | 17.1  | 7.9   |      | 25.5  | 28.5 |
| Level of Service       | A    | B     | A     |      | C     | C    |
| Approach Delay (s)     |      | 15.9  | 7.9   |      | 26.4  |      |
| Approach LOS           |      | B     | A     |      | C     |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 18.7  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.55  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 57.8% | ICU Level of Service | B    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |



HCM Signalized Intersection Capacity Analysis  
 3438: P Street & Alhambra

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL   | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|-------|------|-------|------|------|
| Lane Configurations    |      |      |      |      | ↑↑↑  |      | ↖    | ↗     |      | ↖     | ↗    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      | 4.0  | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor      |      |      |      |      | 0.91 |      | 1.00 | 1.00  |      | 1.00  | 1.00 |      |
| Frt                    |      |      |      |      | 0.97 |      | 1.00 | 0.95  |      | 1.00  | 0.96 |      |
| Flt Protected          |      |      |      |      | 1.00 |      | 0.95 | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)      |      |      |      |      | 4905 |      | 1770 | 1770  |      | 1770  | 1792 |      |
| Flt Permitted          |      |      |      |      | 1.00 |      | 0.95 | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)      |      |      |      |      | 4905 |      | 1770 | 1770  |      | 1770  | 1792 |      |
| Volume (vph)           | 0    | 0    | 0    | 75   | 804  | 240  | 91   | 355   | 176  | 259   | 253  | 86   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 75   | 804  | 240  | 91   | 355   | 176  | 259   | 253  | 86   |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 62   | 0    | 0    | 22    | 0    | 0     | 15   | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 1057 | 0    | 91   | 509   | 0    | 259   | 324  | 0    |
| Turn Type              |      |      |      | Perm |      |      | Prot |       |      | Prot  |      |      |
| Protected Phases       |      |      |      |      | 6    |      | 3    | 8     |      | 7     | 4    |      |
| Permitted Phases       |      |      |      | 6    |      |      |      |       |      |       |      |      |
| Actuated Green, G (s)  |      |      |      |      | 22.0 |      | 10.0 | 32.0  |      | 17.0  | 39.0 |      |
| Effective Green, g (s) |      |      |      |      | 21.0 |      | 9.0  | 31.0  |      | 16.0  | 38.0 |      |
| Actuated g/C Ratio     |      |      |      |      | 0.26 |      | 0.11 | 0.39  |      | 0.20  | 0.48 |      |
| Clearance Time (s)     |      |      |      |      | 3.0  |      | 3.0  | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     |      |      |      |      | 1288 |      | 199  | 686   |      | 354   | 851  |      |
| v/s Ratio Prot         |      |      |      |      |      |      | 0.05 | c0.29 |      | c0.15 | 0.18 |      |
| v/s Ratio Perm         |      |      |      |      | 0.22 |      |      |       |      |       |      |      |
| v/c Ratio              |      |      |      |      | 0.82 |      | 0.46 | 0.74  |      | 0.73  | 0.38 |      |
| Uniform Delay, d1      |      |      |      |      | 27.7 |      | 33.2 | 21.1  |      | 30.0  | 13.5 |      |
| Progression Factor     |      |      |      |      | 1.00 |      | 1.00 | 1.00  |      | 0.82  | 0.80 |      |
| Incremental Delay, d2  |      |      |      |      | 6.0  |      | 7.4  | 7.1   |      | 8.4   | 0.8  |      |
| Delay (s)              |      |      |      |      | 33.7 |      | 40.6 | 28.2  |      | 32.9  | 11.6 |      |
| Level of Service       |      |      |      |      | C    |      | D    | C     |      | C     | B    |      |
| Approach Delay (s)     |      | 0.0  |      |      | 33.7 |      |      | 30.0  |      |       | 20.8 |      |
| Approach LOS           |      | A    |      |      | C    |      |      | C     |      |       | C    |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 29.4  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.76  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 76.2% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 3444: Q Street & 29th Street

7/11/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|-------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑↑    |      |      |      |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      |      |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 0.95  |      |      |      |      |      |      |      |      | 0.91 |      |
| Frt                    |      | 0.97  |      |      |      |      |      |      |      |      | 1.00 |      |
| Flt Protected          |      | 1.00  |      |      |      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (prot)      |      | 3426  |      |      |      |      |      |      |      |      | 5033 |      |
| Flt Permitted          |      | 1.00  |      |      |      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (perm)      |      | 3426  |      |      |      |      |      |      |      |      | 5033 |      |
| Volume (vph)           | 0    | 432   | 117  | 0    | 0    | 0    | 0    | 0    | 0    | 192  | 728  | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 432   | 117  | 0    | 0    | 0    | 0    | 0    | 0    | 192  | 728  | 0    |
| RTOR Reduction (vph)   | 0    | 31    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 59   | 0    |
| Lane Group Flow (vph)  | 0    | 518   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 861  | 0    |
| Turn Type              |      |       |      |      |      |      |      |      |      | Perm |      |      |
| Protected Phases       |      | 2     |      |      |      |      |      |      |      |      | 4    |      |
| Permitted Phases       |      |       |      |      |      |      |      |      |      | 4    |      |      |
| Actuated Green, G (s)  |      | 37.0  |      |      |      |      |      |      |      |      | 37.0 |      |
| Effective Green, g (s) |      | 36.0  |      |      |      |      |      |      |      |      | 36.0 |      |
| Actuated g/C Ratio     |      | 0.45  |      |      |      |      |      |      |      |      | 0.45 |      |
| Clearance Time (s)     |      | 3.0   |      |      |      |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 1542  |      |      |      |      |      |      |      |      | 2265 |      |
| v/s Ratio Prot         |      | c0.15 |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |       |      |      |      |      |      |      |      |      | 0.17 |      |
| v/c Ratio              |      | 0.34  |      |      |      |      |      |      |      |      | 0.38 |      |
| Uniform Delay, d1      |      | 14.3  |      |      |      |      |      |      |      |      | 14.6 |      |
| Progression Factor     |      | 1.00  |      |      |      |      |      |      |      |      | 0.19 |      |
| Incremental Delay, d2  |      | 0.6   |      |      |      |      |      |      |      |      | 0.4  |      |
| Delay (s)              |      | 14.8  |      |      |      |      |      |      |      |      | 3.2  |      |
| Level of Service       |      | B     |      |      |      |      |      |      |      |      | A    |      |
| Approach Delay (s)     |      | 14.8  |      |      | 0.0  |      |      | 0.0  |      |      | 3.2  |      |
| Approach LOS           |      | B     |      |      | A    |      |      | A    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 7.6   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.36  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 40.3% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 3467: N Street & Alhambra

7/11/2005

| Movement                          | EBL                 | EBT   | EBR   | WBL  | WBT  | WBR                  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|---------------------|-------|-------|------|------|----------------------|------|-------|------|------|------|------|
| Lane Configurations               |                     | ↕     |       |      | ↕    |                      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)                | 1900                | 1900  | 1900  | 1900 | 1900 | 1900                 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |                     | 4.0   |       |      | 4.0  |                      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor                 |                     | 1.00  |       |      | 1.00 |                      |      | 1.00  |      |      | 1.00 |      |
| Fr <sub>t</sub>                   |                     | 0.96  |       |      | 0.99 |                      |      | 0.99  |      |      | 0.99 |      |
| Fl <sub>t</sub> Protected         |                     | 0.98  |       |      | 0.99 |                      |      | 1.00  |      |      | 1.00 |      |
| Satd. Flow (prot)                 |                     | 1577  |       |      | 1635 |                      |      | 1649  |      |      | 1662 |      |
| Fl <sub>t</sub> Permitted         |                     | 0.73  |       |      | 0.84 |                      |      | 0.97  |      |      | 0.98 |      |
| Satd. Flow (perm)                 |                     | 1169  |       |      | 1388 |                      |      | 1608  |      |      | 1638 |      |
| Volume (vph)                      | 252                 | 163   | 167   | 55   | 190  | 30                   | 25   | 496   | 61   | 12   | 416  | 24   |
| Peak-hour factor, PHF             | 1.00                | 1.00  | 1.00  | 1.00 | 1.00 | 1.00                 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 252                 | 163   | 167   | 55   | 190  | 30                   | 25   | 496   | 61   | 12   | 416  | 24   |
| RTOR Reduction (vph)              | 0                   | 18    | 0     | 0    | 5    | 0                    | 0    | 6     | 0    | 0    | 2    | 0    |
| Lane Group Flow (vph)             | 0                   | 564   | 0     | 0    | 270  | 0                    | 0    | 576   | 0    | 0    | 450  | 0    |
| Parking (#/hr)                    | 0                   | 0     | 0     | 0    | 0    | 0                    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type                         | Perm                |       |       | Perm |      |                      | Perm |       |      | Perm |      |      |
| Protected Phases                  |                     | 4     |       |      | 8    |                      |      | 2     |      |      | 6    |      |
| Permitted Phases                  | 4                   |       |       | 8    |      |                      | 2    |       |      | 6    |      |      |
| Actuated Green, G (s)             |                     | 42.0  |       |      | 42.0 |                      |      | 32.0  |      |      | 32.0 |      |
| Effective Green, g (s)            |                     | 41.0  |       |      | 41.0 |                      |      | 31.0  |      |      | 31.0 |      |
| Actuated g/C Ratio                |                     | 0.51  |       |      | 0.51 |                      |      | 0.39  |      |      | 0.39 |      |
| Clearance Time (s)                |                     | 3.0   |       |      | 3.0  |                      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |                     | 599   |       |      | 711  |                      |      | 623   |      |      | 635  |      |
| v/s Ratio Prot                    |                     |       |       |      |      |                      |      |       |      |      |      |      |
| v/s Ratio Perm                    |                     | c0.48 |       |      | 0.19 |                      |      | c0.36 |      |      | 0.27 |      |
| v/c Ratio                         |                     | 0.94  |       |      | 0.38 |                      |      | 0.93  |      |      | 0.71 |      |
| Uniform Delay, d1                 |                     | 18.4  |       |      | 11.8 |                      |      | 23.4  |      |      | 20.7 |      |
| Progression Factor                |                     | 1.10  |       |      | 1.00 |                      |      | 0.63  |      |      | 0.92 |      |
| Incremental Delay, d2             |                     | 21.7  |       |      | 1.5  |                      |      | 14.9  |      |      | 5.0  |      |
| Delay (s)                         |                     | 41.9  |       |      | 13.3 |                      |      | 29.7  |      |      | 24.1 |      |
| Level of Service                  |                     | D     |       |      | B    |                      |      | C     |      |      | C    |      |
| Approach Delay (s)                |                     | 41.9  |       |      | 13.3 |                      |      | 29.7  |      |      | 24.1 |      |
| Approach LOS                      |                     | D     |       |      | B    |                      |      | C     |      |      | C    |      |
| <b>Intersection Summary</b>       |                     |       |       |      |      |                      |      |       |      |      |      |      |
| HCM Average Control Delay         |                     |       | 29.7  |      |      | HCM Level of Service |      |       | C    |      |      |      |
| HCM Volume to Capacity ratio      |                     |       | 0.93  |      |      |                      |      |       |      |      |      |      |
| Actuated Cycle Length (s)         |                     |       | 80.0  |      |      | Sum of lost time (s) |      |       | 8.0  |      |      |      |
| Intersection Capacity Utilization |                     |       | 99.1% |      |      | ICU Level of Service |      |       | F    |      |      |      |
| Analysis Period (min)             |                     |       | 15    |      |      |                      |      |       |      |      |      |      |
| c                                 | Critical Lane Group |       |       |      |      |                      |      |       |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
 5802: K Street & 29th Street

7/11/2005

| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT   | WBR                  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|-------|------|-------|----------------------|------|------|------|------|------|------|
|                                   |      |      |       |      |       |                      |      |      |      |      |      |      |
| Lane Configurations               |      | ↑    | ↗     | ↖    | ↑     |                      |      | ↑    | ↗    | ↖    | ↓↓↓  |      |
| Ideal Flow (vphp)                 | 1900 | 1900 | 1900  | 1900 | 1900  | 1900                 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0  | 4.0   | 4.0  | 4.0   |                      |      |      |      |      | 4.0  |      |
| Lane Util. Factor                 |      | 1.00 | 1.00  | 1.00 | 1.00  |                      |      |      |      |      | 0.91 |      |
| Fr <sub>t</sub>                   |      | 1.00 | 0.85  | 1.00 | 1.00  |                      |      |      |      |      | 0.96 |      |
| Fl <sub>t</sub> Protected         |      | 1.00 | 1.00  | 0.95 | 1.00  |                      |      |      |      |      | 1.00 |      |
| Satd. Flow (prot)                 |      | 1863 | 1583  | 1770 | 1863  |                      |      |      |      |      | 4842 |      |
| Fl <sub>t</sub> Permitted         |      | 1.00 | 1.00  | 0.70 | 1.00  |                      |      |      |      |      | 1.00 |      |
| Satd. Flow (perm)                 |      | 1863 | 1583  | 1300 | 1863  |                      |      |      |      |      | 4842 |      |
| Volume (vph)                      | 0    | 91   | 221   | 201  | 611   | 0                    | 0    | 0    | 0    | 88   | 702  | 328  |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 91   | 221   | 201  | 611   | 0                    | 0    | 0    | 0    | 88   | 702  | 328  |
| RTOR Reduction (vph)              | 0    | 0    | 34    | 0    | 0     | 0                    | 0    | 0    | 0    | 0    | 94   | 0    |
| Lane Group Flow (vph)             | 0    | 91   | 187   | 201  | 611   | 0                    | 0    | 0    | 0    | 0    | 1024 | 0    |
| Turn Type                         |      |      | Perm  | Perm |       |                      |      |      |      |      | Perm |      |
| Protected Phases                  |      | 4    |       |      | 8     |                      |      |      |      |      |      | 6    |
| Permitted Phases                  |      |      | 4     | 8    |       |                      |      |      |      |      | 6    |      |
| Actuated Green, G (s)             |      | 45.0 | 45.0  | 45.0 | 45.0  |                      |      |      |      |      | 29.0 |      |
| Effective Green, g (s)            |      | 44.0 | 44.0  | 44.0 | 44.0  |                      |      |      |      |      | 28.0 |      |
| Actuated g/C Ratio                |      | 0.55 | 0.55  | 0.55 | 0.55  |                      |      |      |      |      | 0.35 |      |
| Clearance Time (s)                |      | 3.0  | 3.0   | 3.0  | 3.0   |                      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |      | 1025 | 871   | 715  | 1025  |                      |      |      |      |      | 1695 |      |
| v/s Ratio Prot                    |      | 0.05 |       |      | c0.33 |                      |      |      |      |      |      |      |
| v/s Ratio Perm                    |      |      | 0.12  | 0.15 |       |                      |      |      |      |      | 0.21 |      |
| v/c Ratio                         |      | 0.09 | 0.21  | 0.28 | 0.60  |                      |      |      |      |      | 0.60 |      |
| Uniform Delay, d <sub>1</sub>     |      | 8.5  | 9.2   | 9.6  | 12.1  |                      |      |      |      |      | 21.4 |      |
| Progression Factor                |      | 0.75 | 0.63  | 0.49 | 0.46  |                      |      |      |      |      | 0.89 |      |
| Incremental Delay, d <sub>2</sub> |      | 0.2  | 0.6   | 0.9  | 2.3   |                      |      |      |      |      | 1.2  |      |
| Delay (s)                         |      | 6.5  | 6.3   | 5.5  | 7.8   |                      |      |      |      |      | 20.3 |      |
| Level of Service                  |      | A    | A     | A    | A     |                      |      |      |      |      | C    |      |
| Approach Delay (s)                |      | 6.4  |       |      | 7.3   |                      |      | 0.0  |      |      | 20.3 |      |
| Approach LOS                      |      | A    |       |      | A     |                      |      | A    |      |      | C    |      |
| <b>Intersection Summary</b>       |      |      |       |      |       |                      |      |      |      |      |      |      |
| HCM Average Control Delay         |      |      | 13.6  |      |       | HCM Level of Service |      |      |      |      | B    |      |
| HCM Volume to Capacity ratio      |      |      | 0.60  |      |       |                      |      |      |      |      |      |      |
| Actuated Cycle Length (s)         |      |      | 80.0  |      |       | Sum of lost time (s) |      |      |      | 8.0  |      |      |
| Intersection Capacity Utilization |      |      | 61.5% |      |       | ICU Level of Service |      |      |      |      | B    |      |
| Analysis Period (min)             |      |      | 15    |      |       |                      |      |      |      |      |      |      |
| c Critical Lane Group             |      |      |       |      |       |                      |      |      |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
 5848: J Street & 30th Street

7/11/2005



| Movement               | EBL2 | EBL  | EBT   | WBR2 | NBL   | NBT  | NBR  |
|------------------------|------|------|-------|------|-------|------|------|
| Lane Configurations    |      | ↘    | ↕↕↕   | ↗    | ↘     | ↕↕   |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor      |      | 0.86 | 0.86  |      | 0.91  | 0.91 |      |
| Frt                    |      | 1.00 | 1.00  |      | 1.00  | 0.94 |      |
| Flt Protected          |      | 0.95 | 1.00  |      | 0.95  | 0.99 |      |
| Satd. Flow (prot)      |      | 1522 | 4646  |      | 1610  | 3163 |      |
| Flt Permitted          |      | 0.95 | 1.00  |      | 0.95  | 0.99 |      |
| Satd. Flow (perm)      |      | 1522 | 4646  |      | 1610  | 3163 |      |
| Volume (vph)           | 160  | 101  | 866   | 0    | 260   | 202  | 175  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 160  | 101  | 866   | 0    | 260   | 202  | 175  |
| RTOR Reduction (vph)   | 0    | 72   | 0     | 0    | 0     | 46   | 0    |
| Lane Group Flow (vph)  | 0    | 190  | 866   | 0    | 211   | 380  | 0    |
| Parking (#/hr)         |      |      | 0     | 0    |       |      | 0    |
| Turn Type              | Perm | Perm |       | Free | Perm  |      |      |
| Protected Phases       |      |      | 2     |      |       | 8    |      |
| Permitted Phases       | 2    | 2    |       | Free | 8     |      |      |
| Actuated Green, G (s)  |      | 37.0 | 37.0  |      | 37.0  | 37.0 |      |
| Effective Green, g (s) |      | 36.0 | 36.0  |      | 36.0  | 36.0 |      |
| Actuated g/C Ratio     |      | 0.45 | 0.45  |      | 0.45  | 0.45 |      |
| Clearance Time (s)     |      | 3.0  | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     |      | 685  | 2091  |      | 725   | 1423 |      |
| v/s Ratio Prot         |      |      | c0.19 |      |       |      |      |
| v/s Ratio Perm         |      | 0.12 |       |      | c0.13 | 0.12 |      |
| v/c Ratio              |      | 0.28 | 0.41  |      | 0.29  | 0.27 |      |
| Uniform Delay, d1      |      | 13.8 | 14.9  |      | 13.9  | 13.8 |      |
| Progression Factor     |      | 0.29 | 0.53  |      | 0.32  | 0.19 |      |
| Incremental Delay, d2  |      | 0.6  | 0.4   |      | 0.9   | 0.4  |      |
| Delay (s)              |      | 4.6  | 8.3   |      | 5.4   | 3.0  |      |
| Level of Service       |      | A    | A     |      | A     | A    |      |
| Approach Delay (s)     |      |      | 7.4   |      |       | 3.8  |      |
| Approach LOS           |      |      | A     |      |       | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 6.1   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.35  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 35.9% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 5849: L Street & 30th Street

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|-------|------|------|------|------|
| Lane Configurations    |      |      |      |      | ↑↑↑   |      | ↖    | ↑↑↑   |      |      |      |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0   |      | 4.0  | 4.0   |      |      |      |      |
| Lane Util. Factor      |      |      |      |      | 0.91  |      | 0.86 | 0.86  |      |      |      |      |
| Frt                    |      |      |      |      | 0.97  |      | 1.00 | 1.00  |      |      |      |      |
| Flt Protected          |      |      |      |      | 1.00  |      | 0.95 | 1.00  |      |      |      |      |
| Satd. Flow (prot)      |      |      |      |      | 4927  |      | 1522 | 4646  |      |      |      |      |
| Flt Permitted          |      |      |      |      | 1.00  |      | 0.95 | 1.00  |      |      |      |      |
| Satd. Flow (perm)      |      |      |      |      | 4927  |      | 1522 | 4646  |      |      |      |      |
| Volume (vph)           | 0    | 0    | 0    | 0    | 439   | 115  | 288  | 972   | 0    | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 0    | 439   | 115  | 288  | 972   | 0    | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 45    | 0    | 140  | 0     | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 509   | 0    | 148  | 972   | 0    | 0    | 0    | 0    |
| Parking (#/hr)         |      |      |      |      |       | 0    |      | 0     |      |      |      |      |
| Turn Type              |      |      |      |      |       |      | Perm |       |      |      |      |      |
| Protected Phases       |      |      |      |      | 6     |      |      | 8     |      |      |      |      |
| Permitted Phases       |      |      |      |      |       |      | 8    |       |      |      |      |      |
| Actuated Green, G (s)  |      |      |      |      | 34.0  |      | 40.0 | 40.0  |      |      |      |      |
| Effective Green, g (s) |      |      |      |      | 33.0  |      | 39.0 | 39.0  |      |      |      |      |
| Actuated g/C Ratio     |      |      |      |      | 0.41  |      | 0.49 | 0.49  |      |      |      |      |
| Clearance Time (s)     |      |      |      |      | 3.0   |      | 3.0  | 3.0   |      |      |      |      |
| Lane Grp Cap (vph)     |      |      |      |      | 2032  |      | 742  | 2265  |      |      |      |      |
| v/s Ratio Prot         |      |      |      |      | c0.10 |      |      | c0.21 |      |      |      |      |
| v/s Ratio Perm         |      |      |      |      |       |      | 0.10 |       |      |      |      |      |
| v/c Ratio              |      |      |      |      | 0.25  |      | 0.20 | 0.43  |      |      |      |      |
| Uniform Delay, d1      |      |      |      |      | 15.4  |      | 11.6 | 13.3  |      |      |      |      |
| Progression Factor     |      |      |      |      | 0.63  |      | 0.06 | 0.46  |      |      |      |      |
| Incremental Delay, d2  |      |      |      |      | 0.3   |      | 0.4  | 0.4   |      |      |      |      |
| Delay (s)              |      |      |      |      | 10.0  |      | 1.2  | 6.5   |      |      |      |      |
| Level of Service       |      |      |      |      | A     |      | A    | A     |      |      |      |      |
| Approach Delay (s)     |      | 0.0  |      |      | 10.0  |      |      | 5.3   |      |      | 0.0  |      |
| Approach LOS           |      | A    |      |      | A     |      |      | A     |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 6.7   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.35  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 41.5% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 5880: N Street & 30th Street

7/11/2005



| Movement                          | EBL  | EBT   | WBT  | WBR  | NBL  | NBT  | NBR   | NEL2 | NEL   | NER  |
|-----------------------------------|------|-------|------|------|------|------|-------|------|-------|------|
| Lane Configurations               | ↙    | ↑     | ↘    |      |      | ↑↑↑  |       |      | ↘↙    |      |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 |
| Total Lost time (s)               | 4.0  | 4.0   | 4.0  |      |      | 4.0  |       |      | 4.0   |      |
| Lane Util. Factor                 | 1.00 | 1.00  | 1.00 |      |      | 0.91 |       |      | 0.97  |      |
| Fr <sub>t</sub>                   | 1.00 | 1.00  | 0.99 |      |      | 0.98 |       |      | 0.98  |      |
| Fl <sub>t</sub> Protected         | 0.95 | 1.00  | 1.00 |      |      | 0.99 |       |      | 0.96  |      |
| Satd. Flow (prot)                 | 1770 | 1863  | 1836 |      |      | 4938 |       |      | 3403  |      |
| Fl <sub>t</sub> Permitted         | 0.42 | 1.00  | 1.00 |      |      | 0.99 |       |      | 0.96  |      |
| Satd. Flow (perm)                 | 789  | 1863  | 1836 |      |      | 4938 |       |      | 3403  |      |
| Volume (vph)                      | 75   | 239   | 199  | 24   | 110  | 447  | 89    | 439  | 761   | 147  |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)                   | 75   | 239   | 199  | 24   | 110  | 447  | 89    | 439  | 761   | 147  |
| RTOR Reduction (vph)              | 0    | 0     | 6    | 0    | 0    | 27   | 0     | 0    | 0     | 0    |
| Lane Group Flow (vph)             | 75   | 239   | 217  | 0    | 0    | 619  | 0     | 0    | 1347  | 0    |
| Turn Type                         | Perm |       |      | Perm |      |      | Split |      |       |      |
| Protected Phases                  |      | 4     | 8    |      |      | 2    |       | 6    | 6     |      |
| Permitted Phases                  | 4    |       |      |      | 2    |      |       |      |       |      |
| Actuated Green, G (s)             | 17.0 | 17.0  | 17.0 |      |      | 15.0 |       |      | 39.0  |      |
| Effective Green, g (s)            | 16.0 | 16.0  | 16.0 |      |      | 14.0 |       |      | 38.0  |      |
| Actuated g/C Ratio                | 0.20 | 0.20  | 0.20 |      |      | 0.18 |       |      | 0.48  |      |
| Clearance Time (s)                | 3.0  | 3.0   | 3.0  |      |      | 3.0  |       |      | 3.0   |      |
| Lane Grp Cap (vph)                | 158  | 373   | 367  |      |      | 864  |       |      | 1616  |      |
| v/s Ratio Prot                    |      | c0.13 | 0.12 |      |      |      |       |      | c0.40 |      |
| v/s Ratio Perm                    | 0.10 |       |      |      |      | 0.13 |       |      |       |      |
| v/c Ratio                         | 0.47 | 0.64  | 0.59 |      |      | 0.72 |       |      | 0.83  |      |
| Uniform Delay, d <sub>1</sub>     | 28.3 | 29.4  | 29.0 |      |      | 31.1 |       |      | 18.3  |      |
| Progression Factor                | 1.26 | 1.28  | 1.26 |      |      | 0.76 |       |      | 1.00  |      |
| Incremental Delay, d <sub>2</sub> | 7.3  | 6.1   | 6.2  |      |      | 5.0  |       |      | 5.2   |      |
| Delay (s)                         | 43.0 | 43.7  | 42.8 |      |      | 28.6 |       |      | 23.5  |      |
| Level of Service                  | D    | D     | D    |      |      | C    |       |      | C     |      |
| Approach Delay (s)                |      | 43.5  | 42.8 |      |      | 28.6 |       |      | 23.5  |      |
| Approach LOS                      |      | D     | D    |      |      | C    |       |      | C     |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 29.0  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.76  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 81.1% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 5882: P Street & 30th Street

7/11/2005



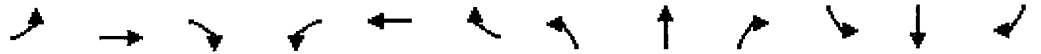
| Movement               | WBT   | WBR  | NBL2 | NBL   | NBT  |
|------------------------|-------|------|------|-------|------|
| Lane Configurations    | ↑↑↑   |      |      | ↑     | ↑↑↑  |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0   |      |      | 4.0   | 4.0  |
| Lane Util. Factor      | 0.91  |      |      | 1.00  | 0.91 |
| Frt                    | 0.96  |      |      | 1.00  | 1.00 |
| Flt Protected          | 1.00  |      |      | 0.95  | 1.00 |
| Satd. Flow (prot)      | 4891  |      |      | 1593  | 4916 |
| Flt Permitted          | 1.00  |      |      | 0.95  | 1.00 |
| Satd. Flow (perm)      | 4891  |      |      | 1593  | 4916 |
| Volume (vph)           | 618   | 211  | 308  | 140   | 469  |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 618   | 211  | 308  | 140   | 469  |
| RTOR Reduction (vph)   | 0     | 0    | 0    | 59    | 0    |
| Lane Group Flow (vph)  | 829   | 0    | 0    | 389   | 469  |
| Parking (#/hr)         |       | 0    | 0    | 0     | 0    |
| Turn Type              |       |      | Perm | Perm  |      |
| Protected Phases       | 6     |      |      |       | 8    |
| Permitted Phases       |       |      | 8    | 8     |      |
| Actuated Green, G (s)  | 31.0  |      |      | 43.0  | 43.0 |
| Effective Green, g (s) | 30.0  |      |      | 42.0  | 42.0 |
| Actuated g/C Ratio     | 0.38  |      |      | 0.52  | 0.52 |
| Clearance Time (s)     | 3.0   |      |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)     | 1834  |      |      | 836   | 2581 |
| v/s Ratio Prot         | c0.17 |      |      |       | 0.10 |
| v/s Ratio Perm         |       |      |      | c0.24 |      |
| v/c Ratio              | 0.45  |      |      | 0.47  | 0.18 |
| Uniform Delay, d1      | 18.8  |      |      | 11.9  | 10.0 |
| Progression Factor     | 0.22  |      |      | 1.00  | 1.00 |
| Incremental Delay, d2  | 0.5   |      |      | 1.9   | 0.2  |
| Delay (s)              | 4.7   |      |      | 13.8  | 10.1 |
| Level of Service       | A     |      |      | B     | B    |
| Approach Delay (s)     | 4.7   |      |      |       | 11.9 |
| Approach LOS           | A     |      |      |       | B    |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 8.5   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.46  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 48.1% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
 5886: Capitol & 30th Street

7/11/2005



| Movement               | EBL   | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|-------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    | ↙     | ↕    |      |      | ↕     |      |      | ↕    |      |      |      |      |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0   | 4.0  |      |      | 4.0   |      |      | 4.0  |      |      |      |      |
| Lane Util. Factor      | 1.00  | 0.95 |      |      | 0.95  |      |      | 0.91 |      |      |      |      |
| Frt                    | 1.00  | 1.00 |      |      | 0.95  |      |      | 0.99 |      |      |      |      |
| Flt Protected          | 0.95  | 1.00 |      |      | 1.00  |      |      | 1.00 |      |      |      |      |
| Satd. Flow (prot)      | 1770  | 3539 |      |      | 3347  |      |      | 4988 |      |      |      |      |
| Flt Permitted          | 0.95  | 1.00 |      |      | 1.00  |      |      | 1.00 |      |      |      |      |
| Satd. Flow (perm)      | 1770  | 3539 |      |      | 3347  |      |      | 4988 |      |      |      |      |
| Volume (vph)           | 125   | 234  | 0    | 0    | 472   | 268  | 139  | 1162 | 139  | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 125   | 234  | 0    | 0    | 472   | 268  | 139  | 1162 | 139  | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0     | 0    | 0    | 0    | 95    | 0    | 0    | 16   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 125   | 234  | 0    | 0    | 645   | 0    | 0    | 1424 | 0    | 0    | 0    | 0    |
| Turn Type              | Prot  |      |      |      |       |      | Perm |      |      |      |      |      |
| Protected Phases       | 7     | 4    |      |      | 8     |      |      | 2    |      |      |      |      |
| Permitted Phases       |       |      |      |      |       |      | 2    |      |      |      |      |      |
| Actuated Green, G (s)  | 14.0  | 42.0 |      |      | 25.0  |      |      | 32.0 |      |      |      |      |
| Effective Green, g (s) | 13.0  | 41.0 |      |      | 24.0  |      |      | 31.0 |      |      |      |      |
| Actuated g/C Ratio     | 0.16  | 0.51 |      |      | 0.30  |      |      | 0.39 |      |      |      |      |
| Clearance Time (s)     | 3.0   | 3.0  |      |      | 3.0   |      |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)     | 288   | 1814 |      |      | 1004  |      |      | 1933 |      |      |      |      |
| v/s Ratio Prot         | c0.07 | 0.07 |      |      | c0.19 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |       |      |      |      |       |      |      | 0.29 |      |      |      |      |
| v/c Ratio              | 0.43  | 0.13 |      |      | 0.64  |      |      | 0.74 |      |      |      |      |
| Uniform Delay, d1      | 30.2  | 10.2 |      |      | 24.3  |      |      | 21.0 |      |      |      |      |
| Progression Factor     | 1.02  | 0.90 |      |      | 0.88  |      |      | 0.71 |      |      |      |      |
| Incremental Delay, d2  | 4.5   | 0.1  |      |      | 1.3   |      |      | 1.8  |      |      |      |      |
| Delay (s)              | 35.3  | 9.3  |      |      | 22.7  |      |      | 16.8 |      |      |      |      |
| Level of Service       | D     | A    |      |      | C     |      |      | B    |      |      |      |      |
| Approach Delay (s)     |       | 18.4 |      |      | 22.7  |      |      | 16.8 |      |      | 0.0  |      |
| Approach LOS           |       | B    |      |      | C     |      |      | B    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 18.7  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.65  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 66.9% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 5888: Capitol & 29th Street

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL   | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|-------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑↑   |      | ↖     | ↑↑   |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      | 4.0   | 4.0  |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 0.95 |      | 1.00  | 0.95 |      |      |      |      |      | 0.91 |      |
| Fr <sub>t</sub>        |      | 0.92 |      | 1.00  | 1.00 |      |      |      |      |      | 0.99 |      |
| Fit Protected          |      | 1.00 |      | 0.95  | 1.00 |      |      |      |      |      | 0.99 |      |
| Satd. Flow (prot)      |      | 3104 |      | 1770  | 3539 |      |      |      |      |      | 4833 |      |
| Fit Permitted          |      | 1.00 |      | 0.47  | 1.00 |      |      |      |      |      | 0.99 |      |
| Satd. Flow (perm)      |      | 3104 |      | 882   | 3539 |      |      |      |      |      | 4833 |      |
| Volume (vph)           | 0    | 214  | 225  | 162   | 482  | 0    | 0    | 0    | 0    | 147  | 759  | 61   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 214  | 225  | 162   | 482  | 0    | 0    | 0    | 0    | 147  | 759  | 61   |
| RTOR Reduction (vph)   | 0    | 44   | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 10   | 0    |
| Lane Group Flow (vph)  | 0    | 395  | 0    | 162   | 482  | 0    | 0    | 0    | 0    | 0    | 957  | 0    |
| Parking (#/hr)         |      | 0    | 0    |       |      |      |      |      |      |      | 0    | 0    |
| Turn Type              |      |      |      | Perm  |      |      |      |      |      |      | Perm |      |
| Protected Phases       |      | 4    |      |       | 8    |      |      |      |      |      |      | 6    |
| Permitted Phases       |      |      |      | 8     |      |      |      |      |      | 6    |      |      |
| Actuated Green, G (s)  |      | 41.0 |      | 41.0  | 41.0 |      |      |      |      |      | 33.0 |      |
| Effective Green, g (s) |      | 40.0 |      | 40.0  | 40.0 |      |      |      |      |      | 32.0 |      |
| Actuated g/C Ratio     |      | 0.50 |      | 0.50  | 0.50 |      |      |      |      |      | 0.40 |      |
| Clearance Time (s)     |      | 3.0  |      | 3.0   | 3.0  |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 1552 |      | 441   | 1770 |      |      |      |      |      | 1933 |      |
| v/s Ratio Prot         |      | 0.13 |      |       | 0.14 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      |      | c0.18 |      |      |      |      |      |      | 0.20 |      |
| v/c Ratio              |      | 0.25 |      | 0.37  | 0.27 |      |      |      |      |      | 0.50 |      |
| Uniform Delay, d1      |      | 11.5 |      | 12.2  | 11.6 |      |      |      |      |      | 18.0 |      |
| Progression Factor     |      | 0.28 |      | 1.33  | 1.29 |      |      |      |      |      | 0.29 |      |
| Incremental Delay, d2  |      | 0.3  |      | 1.8   | 0.3  |      |      |      |      |      | 0.9  |      |
| Delay (s)              |      | 3.5  |      | 18.1  | 15.2 |      |      |      |      |      | 6.0  |      |
| Level of Service       |      | A    |      | B     | B    |      |      |      |      |      | A    |      |
| Approach Delay (s)     |      | 3.5  |      |       | 15.9 |      |      | 0.0  |      |      | 6.0  |      |
| Approach LOS           |      | A    |      |       | B    |      |      | A    |      |      | A    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 8.6   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.42  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 66.9% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 5890: Capitol & 26th St

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|-------|------|------|------|------|
| Lane Configurations    |      |      |      |      |       |      |      |       |      |      |      |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0  | 4.0  |      | 4.0  | 4.0   |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor      | 1.00 | 1.00 |      | 1.00 | 1.00  |      |      | 1.00  |      |      | 1.00 |      |
| Frt                    | 1.00 | 1.00 |      | 1.00 | 0.99  |      |      | 0.97  |      |      | 0.98 |      |
| Flt Protected          | 0.95 | 1.00 |      | 0.95 | 1.00  |      |      | 0.99  |      |      | 0.98 |      |
| Satd. Flow (prot)      | 1770 | 1672 |      | 1770 | 1668  |      |      | 1612  |      |      | 1619 |      |
| Flt Permitted          | 0.27 | 1.00 |      | 0.50 | 1.00  |      |      | 0.98  |      |      | 0.93 |      |
| Satd. Flow (perm)      | 499  | 1672 |      | 939  | 1668  |      |      | 1589  |      |      | 1527 |      |
| Volume (vph)           | 10   | 353  | 7    | 5    | 623   | 22   | 8    | 40    | 15   | 16   | 21   | 5    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 10   | 353  | 7    | 5    | 623   | 22   | 8    | 40    | 15   | 16   | 21   | 5    |
| RTOR Reduction (vph)   | 0    | 1    | 0    | 0    | 2     | 0    | 0    | 10    | 0    | 0    | 3    | 0    |
| Lane Group Flow (vph)  | 10   | 359  | 0    | 5    | 643   | 0    | 0    | 53    | 0    | 0    | 39   | 0    |
| Parking (#/hr)         |      | 0    | 0    |      | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      |      | Perm |       |      | Perm |       |      | Perm |      |      |
| Protected Phases       |      | 4    |      |      | 8     |      |      | 2     |      |      | 6    |      |
| Permitted Phases       | 4    |      |      | 8    |       |      | 2    |       |      | 6    |      |      |
| Actuated Green, G (s)  | 27.0 | 27.0 |      | 27.0 | 27.0  |      |      | 17.0  |      |      | 17.0 |      |
| Effective Green, g (s) | 26.0 | 26.0 |      | 26.0 | 26.0  |      |      | 16.0  |      |      | 16.0 |      |
| Actuated g/C Ratio     | 0.52 | 0.52 |      | 0.52 | 0.52  |      |      | 0.32  |      |      | 0.32 |      |
| Clearance Time (s)     | 3.0  | 3.0  |      | 3.0  | 3.0   |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)     | 259  | 869  |      | 488  | 867   |      |      | 508   |      |      | 489  |      |
| v/s Ratio Prot         |      | 0.21 |      |      | c0.39 |      |      |       |      |      |      |      |
| v/s Ratio Perm         | 0.02 |      |      | 0.01 |       |      |      | c0.03 |      |      | 0.03 |      |
| v/c Ratio              | 0.04 | 0.41 |      | 0.01 | 0.74  |      |      | 0.10  |      |      | 0.08 |      |
| Uniform Delay, d1      | 5.9  | 7.3  |      | 5.8  | 9.4   |      |      | 12.0  |      |      | 11.9 |      |
| Progression Factor     | 1.00 | 1.00 |      | 1.00 | 1.00  |      |      | 1.00  |      |      | 0.68 |      |
| Incremental Delay, d2  | 0.3  | 1.4  |      | 0.0  | 5.7   |      |      | 0.4   |      |      | 0.3  |      |
| Delay (s)              | 6.2  | 8.8  |      | 5.8  | 15.0  |      |      | 12.4  |      |      | 8.4  |      |
| Level of Service       | A    | A    |      | A    | B     |      |      | B     |      |      | A    |      |
| Approach Delay (s)     |      | 8.7  |      |      | 15.0  |      |      | 12.4  |      |      | 8.4  |      |
| Approach LOS           |      | A    |      |      | B     |      |      | B     |      |      | A    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 12.5  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.50  |                      |     |
| Actuated Cycle Length (s)         | 50.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 46.1% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6481: J Street & 28th Street

7/11/2005



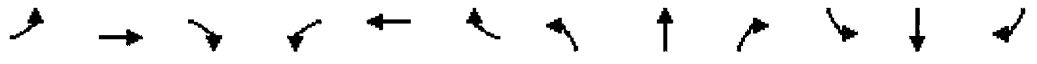
| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations       |      | ↕↕↕  |      |      |      |      |      | ↕    |      |      | ↕    |      |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |      | 4.0  |      |      |      |      |      | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor         |      | 0.91 |      |      |      |      |      | 1.00 |      |      | 1.00 |      |
| Fr <sub>t</sub>           |      | 1.00 |      |      |      |      |      | 0.92 |      |      | 1.00 |      |
| Fl <sub>t</sub> Protected |      | 1.00 |      |      |      |      |      | 1.00 |      |      | 0.99 |      |
| Satd. Flow (prot)         |      | 4891 |      |      |      |      |      | 1547 |      |      | 1654 |      |
| Fl <sub>t</sub> Permitted |      | 1.00 |      |      |      |      |      | 1.00 |      |      | 0.93 |      |
| Satd. Flow (perm)         |      | 4891 |      |      |      |      |      | 1547 |      |      | 1560 |      |
| Volume (vph)              | 34   | 1142 | 30   | 0    | 0    | 0    | 0    | 82   | 110  | 14   | 37   | 0    |
| Peak-hour factor, PHF     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 34   | 1142 | 30   | 0    | 0    | 0    | 0    | 82   | 110  | 14   | 37   | 0    |
| RTOR Reduction (vph)      | 0    | 3    | 0    | 0    | 0    | 0    | 0    | 28   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)     | 0    | 1203 | 0    | 0    | 0    | 0    | 0    | 164  | 0    | 0    | 51   | 0    |
| Parking (#/hr)            | 0    | 0    | 0    |      |      |      |      | 0    | 0    | 0    | 0    |      |
| Turn Type                 | Perm |      |      |      |      |      | Perm |      |      |      |      |      |
| Protected Phases          |      | 4    |      |      |      |      |      | 2    |      |      | 6    |      |
| Permitted Phases          | 4    |      |      |      |      |      |      |      |      | 6    |      |      |
| Actuated Green, G (s)     |      | 40.0 |      |      |      |      |      | 34.0 |      |      | 34.0 |      |
| Effective Green, g (s)    |      | 39.0 |      |      |      |      |      | 33.0 |      |      | 33.0 |      |
| Actuated g/C Ratio        |      | 0.49 |      |      |      |      |      | 0.41 |      |      | 0.41 |      |
| Clearance Time (s)        |      | 3.0  |      |      |      |      |      | 3.0  |      |      | 3.0  |      |
| Lane Grp Cap (vph)        |      | 2384 |      |      |      |      |      | 638  |      |      | 644  |      |
| v/s Ratio Prot            |      |      |      |      |      |      |      | 0.11 |      |      |      |      |
| v/s Ratio Perm            |      | 0.25 |      |      |      |      |      |      |      |      | 0.03 |      |
| v/c Ratio                 |      | 0.50 |      |      |      |      |      | 0.26 |      |      | 0.08 |      |
| Uniform Delay, d1         |      | 13.9 |      |      |      |      |      | 15.4 |      |      | 14.3 |      |
| Progression Factor        |      | 1.00 |      |      |      |      |      | 0.89 |      |      | 1.00 |      |
| Incremental Delay, d2     |      | 0.8  |      |      |      |      |      | 1.0  |      |      | 0.2  |      |
| Delay (s)                 |      | 14.7 |      |      |      |      |      | 14.8 |      |      | 14.5 |      |
| Level of Service          |      | B    |      |      |      |      |      | B    |      |      | B    |      |
| Approach Delay (s)        |      | 14.7 |      |      | 0.0  |      |      | 14.8 |      |      | 14.5 |      |
| Approach LOS              |      | B    |      |      | A    |      |      | B    |      |      | B    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 14.7  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.39  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 44.3% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6482: K Street & 28th Street

7/11/2005

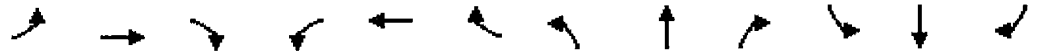


| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↕    | ↗    |      | ↕    | ↗    |      | ↕    | ↗    |      | ↕    | ↗    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  |      | 4.0  | 4.0  |      | 4.0  | 4.0  |      | 4.0  | 4.0  |
| Lane Util. Factor      |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |
| Frt                    |      | 1.00 | 0.85 |      | 1.00 | 0.85 |      | 1.00 | 0.85 |      | 1.00 | 0.85 |
| Flt Protected          |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 0.99 | 1.00 |      | 0.99 | 1.00 |
| Satd. Flow (prot)      |      | 1673 | 1425 |      | 1675 | 1425 |      | 1652 | 1425 |      | 1656 | 1425 |
| Flt Permitted          |      | 0.98 | 1.00 |      | 0.99 | 1.00 |      | 0.89 | 1.00 |      | 0.92 | 1.00 |
| Satd. Flow (perm)      |      | 1646 | 1425 |      | 1665 | 1425 |      | 1499 | 1425 |      | 1535 | 1425 |
| Volume (vph)           | 8    | 213  | 14   | 15   | 639  | 107  | 55   | 131  | 71   | 24   | 74   | 8    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 8    | 213  | 14   | 15   | 639  | 107  | 55   | 131  | 71   | 24   | 74   | 8    |
| RTOR Reduction (vph)   | 0    | 0    | 5    | 0    | 0    | 25   | 0    | 0    | 51   | 0    | 0    | 6    |
| Lane Group Flow (vph)  | 0    | 221  | 9    | 0    | 654  | 82   | 0    | 186  | 20   | 0    | 98   | 2    |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      | Perm | Perm |      | Perm | Perm |      | Perm | Perm |      | Perm |
| Protected Phases       |      | 4    |      |      | 8    |      |      | 2    |      |      | 6    |      |
| Permitted Phases       | 4    |      | 4    | 8    |      | 8    | 2    |      | 2    | 6    |      | 6    |
| Actuated Green, G (s)  |      | 51.0 | 51.0 |      | 51.0 | 51.0 |      | 23.0 | 23.0 |      | 23.0 | 23.0 |
| Effective Green, g (s) |      | 50.0 | 50.0 |      | 50.0 | 50.0 |      | 22.0 | 22.0 |      | 22.0 | 22.0 |
| Actuated g/C Ratio     |      | 0.62 | 0.62 |      | 0.62 | 0.62 |      | 0.28 | 0.28 |      | 0.28 | 0.28 |
| Clearance Time (s)     |      | 3.0  | 3.0  |      | 3.0  | 3.0  |      | 3.0  | 3.0  |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |      | 1029 | 891  |      | 1041 | 891  |      | 412  | 392  |      | 422  | 392  |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      | 0.13 | 0.01 |      | 0.39 | 0.06 |      | 0.12 | 0.01 |      | 0.06 | 0.00 |
| v/c Ratio              |      | 0.21 | 0.01 |      | 0.63 | 0.09 |      | 0.45 | 0.05 |      | 0.23 | 0.01 |
| Uniform Delay, d1      |      | 6.5  | 5.7  |      | 9.3  | 6.0  |      | 24.0 | 21.3 |      | 22.5 | 21.1 |
| Progression Factor     |      | 1.00 | 1.00 |      | 0.75 | 0.63 |      | 0.89 | 0.16 |      | 0.97 | 1.03 |
| Incremental Delay, d2  |      | 0.5  | 0.0  |      | 2.3  | 0.2  |      | 3.3  | 0.2  |      | 1.3  | 0.0  |
| Delay (s)              |      | 7.0  | 5.7  |      | 9.3  | 3.9  |      | 24.7 | 3.6  |      | 23.0 | 21.8 |
| Level of Service       |      | A    | A    |      | A    | A    |      | C    | A    |      | C    | C    |
| Approach Delay (s)     |      | 6.9  |      |      | 8.5  |      |      | 18.9 |      |      | 22.9 |      |
| Approach LOS           |      | A    |      |      | A    |      |      | B    |      |      | C    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.3  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.57  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 70.8% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6483: L Street & 28th Street

7/11/2005



| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations       |      |      |      |      | ↕↕   |      |      | ↕    |      |      | ↕    |      |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |      |      |      |      | 4.0  |      |      | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor         |      |      |      |      | 0.95 |      |      | 1.00 |      |      | 1.00 |      |
| Fr <sub>t</sub>           |      |      |      |      | 0.99 |      |      | 1.00 |      |      | 0.97 |      |
| Fl <sub>t</sub> Protected |      |      |      |      | 1.00 |      |      | 0.98 |      |      | 1.00 |      |
| Satd. Flow (prot)         |      |      |      |      | 3323 |      |      | 1636 |      |      | 1628 |      |
| Fl <sub>t</sub> Permitted |      |      |      |      | 1.00 |      |      | 0.80 |      |      | 1.00 |      |
| Satd. Flow (perm)         |      |      |      |      | 3323 |      |      | 1341 |      |      | 1628 |      |
| Volume (vph)              | 0    | 0    | 0    | 19   | 825  | 65   | 149  | 153  | 0    | 0    | 85   | 23   |
| Peak-hour factor, PHF     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 0    | 0    | 0    | 19   | 825  | 65   | 149  | 153  | 0    | 0    | 85   | 23   |
| RTOR Reduction (vph)      | 0    | 0    | 0    | 0    | 7    | 0    | 0    | 0    | 0    | 0    | 12   | 0    |
| Lane Group Flow (vph)     | 0    | 0    | 0    | 0    | 902  | 0    | 0    | 302  | 0    | 0    | 96   | 0    |
| Parking (#/hr)            | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Turn Type                 |      |      |      |      | Perm |      |      | Perm |      |      |      |      |
| Protected Phases          |      |      |      |      |      | 6    |      |      | 8    |      |      | 4    |
| Permitted Phases          |      |      |      |      | 6    |      |      | 8    |      |      |      |      |
| Actuated Green, G (s)     |      |      |      |      | 38.0 |      |      | 36.0 |      |      | 36.0 |      |
| Effective Green, g (s)    |      |      |      |      | 37.0 |      |      | 35.0 |      |      | 35.0 |      |
| Actuated g/C Ratio        |      |      |      |      | 0.46 |      |      | 0.44 |      |      | 0.44 |      |
| Clearance Time (s)        |      |      |      |      | 3.0  |      |      | 3.0  |      |      | 3.0  |      |
| Lane Grp Cap (vph)        |      |      |      |      | 1537 |      |      | 587  |      |      | 712  |      |
| v/s Ratio Prot            |      |      |      |      |      |      |      |      |      |      | 0.06 |      |
| v/s Ratio Perm            |      |      |      |      | 0.27 |      |      | 0.23 |      |      |      |      |
| v/c Ratio                 |      |      |      |      | 0.59 |      |      | 0.51 |      |      | 0.13 |      |
| Uniform Delay, d1         |      |      |      |      | 15.9 |      |      | 16.3 |      |      | 13.4 |      |
| Progression Factor        |      |      |      |      | 0.47 |      |      | 0.74 |      |      | 0.60 |      |
| Incremental Delay, d2     |      |      |      |      | 1.6  |      |      | 2.1  |      |      | 0.4  |      |
| Delay (s)                 |      |      |      |      | 9.1  |      |      | 14.1 |      |      | 8.5  |      |
| Level of Service          |      |      |      |      | A    |      |      | B    |      |      | A    |      |
| Approach Delay (s)        |      | 0.0  |      |      | 9.1  |      |      | 14.1 |      |      | 8.5  |      |
| Approach LOS              |      | A    |      |      | A    |      |      | B    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.2  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.55  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 55.1% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6484: Capitol & 28th Street

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR   | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|-------|------|-------|------|------|------|------|
| Lane Configurations    |      | ↕    |      | ↗    | ↖    |       |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      | 4.0  | 4.0  |       |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00 |      | 1.00 | 1.00 |       |      | 1.00  |      |      | 1.00 |      |
| Frt                    |      | 1.00 |      | 1.00 | 0.98 |       |      | 0.99  |      |      | 0.98 |      |
| Flt Protected          |      | 1.00 |      | 0.95 | 1.00 |       |      | 0.98  |      |      | 0.98 |      |
| Satd. Flow (prot)      |      | 1668 |      | 1770 | 1647 |       |      | 1627  |      |      | 1618 |      |
| Flt Permitted          |      | 0.94 |      | 0.40 | 1.00 |       |      | 0.81  |      |      | 0.80 |      |
| Satd. Flow (perm)      |      | 1575 |      | 741  | 1647 |       |      | 1353  |      |      | 1320 |      |
| Volume (vph)           | 24   | 378  | 7    | 11   | 437  | 58    | 232  | 262   | 30   | 34   | 47   | 12   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 24   | 378  | 7    | 11   | 437  | 58    | 232  | 262   | 30   | 34   | 47   | 12   |
| RTOR Reduction (vph)   | 0    | 1    | 0    | 0    | 6    | 0     | 0    | 3     | 0    | 0    | 6    | 0    |
| Lane Group Flow (vph)  | 0    | 408  | 0    | 11   | 489  | 0     | 0    | 521   | 0    | 0    | 87   | 0    |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      | Perm |      | Perm |       |      | Perm  |      |      |      |      |
| Protected Phases       |      | 4    |      |      | 8    |       |      | 2     |      |      |      | 6    |
| Permitted Phases       | 4    |      |      |      | 8    |       | 2    |       |      |      | 6    |      |
| Actuated Green, G (s)  |      | 32.0 |      |      | 32.0 | 32.0  |      | 42.0  |      |      |      | 42.0 |
| Effective Green, g (s) |      | 31.0 |      |      | 31.0 | 31.0  |      | 41.0  |      |      |      | 41.0 |
| Actuated g/C Ratio     |      | 0.39 |      |      | 0.39 | 0.39  |      | 0.51  |      |      |      | 0.51 |
| Clearance Time (s)     |      | 3.0  |      |      | 3.0  | 3.0   |      | 3.0   |      |      |      | 3.0  |
| Lane Grp Cap (vph)     |      | 610  |      |      | 287  | 638   |      | 693   |      |      |      | 677  |
| v/s Ratio Prot         |      |      |      |      |      | c0.30 |      |       |      |      |      |      |
| v/s Ratio Perm         |      | 0.26 |      |      | 0.01 |       |      | c0.39 |      |      |      | 0.07 |
| v/c Ratio              |      | 0.67 |      |      | 0.04 | 0.77  |      | 0.75  |      |      |      | 0.13 |
| Uniform Delay, d1      |      | 20.3 |      |      | 15.2 | 21.3  |      | 15.5  |      |      |      | 10.2 |
| Progression Factor     |      | 1.00 |      |      | 0.45 | 0.58  |      | 0.37  |      |      |      | 0.79 |
| Incremental Delay, d2  |      | 5.8  |      |      | 0.2  | 8.3   |      | 6.8   |      |      |      | 0.4  |
| Delay (s)              |      | 26.0 |      |      | 7.2  | 20.8  |      | 12.5  |      |      |      | 8.5  |
| Level of Service       |      | C    |      |      | A    | C     |      | B     |      |      |      | A    |
| Approach Delay (s)     |      | 26.0 |      |      |      | 20.5  |      | 12.5  |      |      |      | 8.5  |
| Approach LOS           |      | C    |      |      |      | C     |      | B     |      |      |      | A    |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 18.5  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.76  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 81.8% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6485: N Street & 28th Street

7/11/2005



| Movement               | EBL  | EBT  | EBR   | WBL  | WBT  | WBR  | NBL   | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|-------|------|------|------|-------|------|------|------|------|------|
| Lane Configurations    |      | ↔↔   |       |      | ↔    |      |       | ↔    |      |      | ↔    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |       |      | 4.0  |      |       | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor      |      | 0.95 |       |      | 1.00 |      |       | 1.00 |      |      | 1.00 |      |
| Frt                    |      | 1.00 |       |      | 0.88 |      |       | 0.95 |      |      | 1.00 |      |
| Flt Protected          |      | 1.00 |       |      | 0.99 |      |       | 1.00 |      |      | 0.99 |      |
| Satd. Flow (prot)      |      | 3337 |       |      | 1466 |      |       | 1596 |      |      | 1652 |      |
| Flt Permitted          |      | 0.88 |       |      | 0.93 |      |       | 1.00 |      |      | 0.92 |      |
| Satd. Flow (perm)      |      | 2964 |       |      | 1368 |      |       | 1596 |      |      | 1542 |      |
| Volume (vph)           | 41   | 364  | 7     | 48   | 0    | 416  | 0     | 98   | 54   | 20   | 48   | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 41   | 364  | 7     | 48   | 0    | 416  | 0     | 98   | 54   | 20   | 48   | 0    |
| RTOR Reduction (vph)   | 0    | 1    | 0     | 0    | 187  | 0    | 0     | 25   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 411  | 0     | 0    | 277  | 0    | 0     | 127  | 0    | 0    | 68   | 0    |
| Parking (#/hr)         | 0    | 0    | 0     | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      | Perm  |      |      |      | Perm  |      |      |      |      |      |
| Protected Phases       | 2    |      | 6     |      |      |      | 8     |      |      |      |      |      |
| Permitted Phases       | 2    |      | 6     |      |      |      | 4     |      |      |      |      |      |
| Actuated Green, G (s)  | 45.0 |      | 45.0  |      |      |      | 29.0  |      |      |      |      |      |
| Effective Green, g (s) | 44.0 |      | 44.0  |      |      |      | 28.0  |      |      |      |      |      |
| Actuated g/C Ratio     | 0.55 |      | 0.55  |      |      |      | 0.35  |      |      |      |      |      |
| Clearance Time (s)     | 3.0  |      | 3.0   |      |      |      | 3.0   |      |      |      |      |      |
| Lane Grp Cap (vph)     | 1630 |      | 752   |      |      |      | 559   |      |      |      |      |      |
| v/s Ratio Prot         |      |      |       |      |      |      | c0.08 |      |      |      |      |      |
| v/s Ratio Perm         | 0.14 |      | c0.20 |      |      |      | 0.04  |      |      |      |      |      |
| v/c Ratio              | 0.25 |      | 0.37  |      |      |      | 0.23  |      |      |      |      |      |
| Uniform Delay, d1      | 9.4  |      | 10.2  |      |      |      | 18.4  |      |      |      |      |      |
| Progression Factor     | 1.00 |      | 1.55  |      |      |      | 1.00  |      |      |      |      |      |
| Incremental Delay, d2  | 0.4  |      | 1.1   |      |      |      | 0.9   |      |      |      |      |      |
| Delay (s)              | 9.8  |      | 16.9  |      |      |      | 19.3  |      |      |      |      |      |
| Level of Service       | A    |      | B     |      |      |      | B     |      |      |      |      |      |
| Approach Delay (s)     | 9.8  |      | 16.9  |      |      |      | 19.3  |      |      |      |      |      |
| Approach LOS           | A    |      | B     |      |      |      | B     |      |      |      |      |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 14.4  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.31  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 65.3% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
6511: K Street & Alhambra

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|-------|------|
| Lane Configurations    |      | ↕    | ↗    |      | ↕     |      |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  |      | 4.0   |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor      |      | 1.00 | 1.00 |      | 1.00  |      |      | 0.95 |      |      | 0.95  |      |
| Frt                    |      | 1.00 | 0.85 |      | 0.99  |      |      | 0.99 |      |      | 0.94  |      |
| Flt Protected          |      | 0.97 | 1.00 |      | 0.99  |      |      | 0.99 |      |      | 1.00  |      |
| Satd. Flow (prot)      |      | 1812 | 1583 |      | 1822  |      |      | 3453 |      |      | 3339  |      |
| Flt Permitted          |      | 0.84 | 1.00 |      | 0.93  |      |      | 0.56 |      |      | 0.95  |      |
| Satd. Flow (perm)      |      | 1570 | 1583 |      | 1720  |      |      | 1958 |      |      | 3187  |      |
| Volume (vph)           | 44   | 35   | 110  | 25   | 61    | 6    | 131  | 319  | 36   | 3    | 702   | 424  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 44   | 35   | 110  | 25   | 61    | 6    | 131  | 319  | 36   | 3    | 702   | 424  |
| RTOR Reduction (vph)   | 0    | 0    | 73   | 0    | 3     | 0    | 0    | 7    | 0    | 0    | 112   | 0    |
| Lane Group Flow (vph)  | 0    | 79   | 37   | 0    | 89    | 0    | 0    | 479  | 0    | 0    | 1017  | 0    |
| Turn Type              | Perm |      | Perm | Perm |       |      | Perm |      |      | Perm |       |      |
| Protected Phases       |      | 4    |      |      | 8     |      |      | 2    |      |      | 6     |      |
| Permitted Phases       | 4    |      | 4    | 8    |       |      | 2    |      |      | 6    |       |      |
| Actuated Green, G (s)  |      | 28.0 | 28.0 |      | 28.0  |      |      | 46.0 |      |      | 46.0  |      |
| Effective Green, g (s) |      | 27.0 | 27.0 |      | 27.0  |      |      | 45.0 |      |      | 45.0  |      |
| Actuated g/C Ratio     |      | 0.34 | 0.34 |      | 0.34  |      |      | 0.56 |      |      | 0.56  |      |
| Clearance Time (s)     |      | 3.0  | 3.0  |      | 3.0   |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)     |      | 530  | 534  |      | 581   |      |      | 1101 |      |      | 1793  |      |
| v/s Ratio Prot         |      |      |      |      |       |      |      |      |      |      |       |      |
| v/s Ratio Perm         |      | 0.05 | 0.02 |      | c0.05 |      |      | 0.24 |      |      | c0.32 |      |
| v/c Ratio              |      | 0.15 | 0.07 |      | 0.15  |      |      | 0.43 |      |      | 0.57  |      |
| Uniform Delay, d1      |      | 18.5 | 18.0 |      | 18.5  |      |      | 10.1 |      |      | 11.2  |      |
| Progression Factor     |      | 0.81 | 0.83 |      | 1.00  |      |      | 1.05 |      |      | 0.41  |      |
| Incremental Delay, d2  |      | 0.6  | 0.2  |      | 0.6   |      |      | 0.8  |      |      | 0.9   |      |
| Delay (s)              |      | 15.5 | 15.2 |      | 19.1  |      |      | 11.5 |      |      | 5.5   |      |
| Level of Service       |      | B    | B    |      | B     |      |      | B    |      |      | A     |      |
| Approach Delay (s)     |      | 15.3 |      |      | 19.1  |      |      | 11.5 |      |      | 5.5   |      |
| Approach LOS           |      | B    |      |      | B     |      |      | B    |      |      | A     |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 8.7   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.41  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 68.5% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

# HCM Signalized Intersection Capacity Analysis

9622: K Street & 30th Street

7/11/2005

| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      |      |       |      |      |      |      |      |      |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0  | 4.0  |      |      | 4.0   | 4.0  |      | 4.0  |      |      |      |      |
| Lane Util. Factor      | 1.00 | 1.00 |      |      | 1.00  | 1.00 |      | 0.91 |      |      |      |      |
| Frt                    | 1.00 | 1.00 |      |      | 1.00  | 0.85 |      | 0.99 |      |      |      |      |
| Flt Protected          | 0.95 | 1.00 |      |      | 1.00  | 1.00 |      | 0.98 |      |      |      |      |
| Satd. Flow (prot)      | 1770 | 1863 |      |      | 1863  | 1583 |      | 4936 |      |      |      |      |
| Flt Permitted          | 0.36 | 1.00 |      |      | 1.00  | 1.00 |      | 0.98 |      |      |      |      |
| Satd. Flow (perm)      | 663  | 1863 |      |      | 1863  | 1583 |      | 4936 |      |      |      |      |
| Volume (vph)           | 36   | 141  | 0    | 0    | 513   | 56   | 276  | 542  | 88   | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 36   | 141  | 0    | 0    | 513   | 56   | 276  | 542  | 88   | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 0     | 25   | 0    | 16   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 36   | 141  | 0    | 0    | 513   | 31   | 0    | 890  | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      |      |      |       | Perm | Perm |      |      |      |      |      |
| Protected Phases       |      | 4    |      |      | 8     |      |      | 2    |      |      |      |      |
| Permitted Phases       | 4    |      |      |      |       | 8    | 2    |      |      |      |      |      |
| Actuated Green, G (s)  | 44.0 | 44.0 |      |      | 44.0  | 44.0 |      | 30.0 |      |      |      |      |
| Effective Green, g (s) | 43.0 | 43.0 |      |      | 43.0  | 43.0 |      | 29.0 |      |      |      |      |
| Actuated g/C Ratio     | 0.54 | 0.54 |      |      | 0.54  | 0.54 |      | 0.36 |      |      |      |      |
| Clearance Time (s)     | 3.0  | 3.0  |      |      | 3.0   | 3.0  |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)     | 356  | 1001 |      |      | 1001  | 851  |      | 1789 |      |      |      |      |
| v/s Ratio Prot         |      | 0.08 |      |      | c0.28 |      |      |      |      |      |      |      |
| v/s Ratio Perm         | 0.05 |      |      |      |       | 0.02 |      | 0.18 |      |      |      |      |
| v/c Ratio              | 0.10 | 0.14 |      |      | 0.51  | 0.04 |      | 0.50 |      |      |      |      |
| Uniform Delay, d1      | 9.0  | 9.3  |      |      | 11.8  | 8.7  |      | 19.8 |      |      |      |      |
| Progression Factor     | 1.01 | 1.02 |      |      | 1.65  | 2.52 |      | 0.28 |      |      |      |      |
| Incremental Delay, d2  | 0.5  | 0.3  |      |      | 1.6   | 0.1  |      | 0.9  |      |      |      |      |
| Delay (s)              | 9.7  | 9.8  |      |      | 21.2  | 22.1 |      | 6.5  |      |      |      |      |
| Level of Service       | A    | A    |      |      | C     | C    |      | A    |      |      |      |      |
| Approach Delay (s)     |      | 9.7  |      |      | 21.2  |      |      | 6.5  |      |      | 0.0  |      |
| Approach LOS           |      | A    |      |      | C     |      |      | A    |      |      | A    |      |

### Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.9  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.51  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 61.5% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

CUMULATIVE NO PROJECT  
WITH SMART PLAN

PM Peak Hour

Signalized Intersections

(pm6)



HCM Signalized Intersection Capacity Analysis  
 2004: L Street & 21th Street

4/4/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT  | WBR  | NBL  | NBT                  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|-------|------|------|------|------|----------------------|------|------|------|------|
| Lane Configurations               |      |      |       |      | ↑↑   |      |      | ↑↑↑                  |      |      |      |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      |      |       |      | 4.0  |      |      | 4.0                  |      |      |      |      |
| Lane Util. Factor                 |      |      |       |      | 0.95 |      |      | 0.91                 |      |      |      |      |
| Frt                               |      |      |       |      | 0.99 |      |      | 1.00                 |      |      |      |      |
| Flt Protected                     |      |      |       |      | 1.00 |      |      | 1.00                 |      |      |      |      |
| Satd. Flow (prot)                 |      |      |       |      | 3316 |      |      | 4893                 |      |      |      |      |
| Flt Permitted                     |      |      |       |      | 1.00 |      |      | 1.00                 |      |      |      |      |
| Satd. Flow (perm)                 |      |      |       |      | 3316 |      |      | 4893                 |      |      |      |      |
| Volume (vph)                      | 0    | 0    | 0     | 0    | 765  | 77   | 165  | 1609                 | 0    | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 0    | 765  | 77   | 165  | 1609                 | 0    | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 0    | 7    | 0    | 0    | 21                   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 0    | 835  | 0    | 0    | 1753                 | 0    | 0    | 0    | 0    |
| Parking (#/hr)                    | 0    | 0    |       |      | 0    | 0    | 0    | 0                    | 0    |      |      |      |
| Turn Type                         |      |      |       |      |      |      |      | Perm                 |      |      |      |      |
| Protected Phases                  |      |      |       |      | 6    |      |      | 8                    |      |      |      |      |
| Permitted Phases                  |      |      |       |      |      |      | 8    |                      |      |      |      |      |
| Actuated Green, G (s)             |      |      |       |      | 24.0 |      |      | 30.0                 |      |      |      |      |
| Effective Green, g (s)            |      |      |       |      | 23.0 |      |      | 29.0                 |      |      |      |      |
| Actuated g/C Ratio                |      |      |       |      | 0.38 |      |      | 0.48                 |      |      |      |      |
| Clearance Time (s)                |      |      |       |      | 3.0  |      |      | 3.0                  |      |      |      |      |
| Lane Grp Cap (vph)                |      |      |       |      | 1271 |      |      | 2365                 |      |      |      |      |
| v/s Ratio Prot                    |      |      |       |      | 0.25 |      |      |                      |      |      |      |      |
| v/s Ratio Perm                    |      |      |       |      |      |      |      | 0.36                 |      |      |      |      |
| v/c Ratio                         |      |      |       |      | 0.66 |      |      | 0.74                 |      |      |      |      |
| Uniform Delay, d1                 |      |      |       |      | 15.2 |      |      | 12.5                 |      |      |      |      |
| Progression Factor                |      |      |       |      | 0.47 |      |      | 1.00                 |      |      |      |      |
| Incremental Delay, d2             |      |      |       |      | 2.5  |      |      | 2.1                  |      |      |      |      |
| Delay (s)                         |      |      |       |      | 9.7  |      |      | 14.6                 |      |      |      |      |
| Level of Service                  |      |      |       |      | A    |      |      | B                    |      |      |      |      |
| Approach Delay (s)                |      | 0.0  |       |      | 9.7  |      |      | 14.6                 |      |      | 0.0  |      |
| Approach LOS                      |      | A    |       |      | A    |      |      | B                    |      |      | A    |      |
| <b>Intersection Summary</b>       |      |      |       |      |      |      |      |                      |      |      |      |      |
| HCM Average Control Delay         |      |      | 13.0  |      |      |      |      | HCM Level of Service |      |      | B    |      |
| HCM Volume to Capacity ratio      |      |      | 0.70  |      |      |      |      |                      |      |      |      |      |
| Actuated Cycle Length (s)         |      |      | 60.0  |      |      |      |      | Sum of lost time (s) |      |      | 8.0  |      |
| Intersection Capacity Utilization |      |      | 64.7% |      |      |      |      | ICU Level of Service |      |      | C    |      |
| Analysis Period (min)             |      |      | 15    |      |      |      |      |                      |      |      |      |      |
| c Critical Lane Group             |      |      |       |      |      |      |      |                      |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
 2012: J Street & 21th Street

4/4/2005



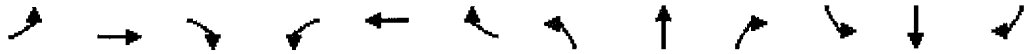
| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations    |      | ↑↑↑  |      |      |      |      |      | ↑↑↑   |      |      |      |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      |      |      |      |      | 4.0   |      |      |      |      |
| Lane Util. Factor      |      | 0.91 |      |      |      |      |      | 0.91  |      |      |      |      |
| Frt                    |      | 1.00 |      |      |      |      |      | 0.97  |      |      |      |      |
| Flt Protected          |      | 1.00 |      |      |      |      |      | 1.00  |      |      |      |      |
| Satd. Flow (prot)      |      | 4906 |      |      |      |      |      | 4761  |      |      |      |      |
| Flt Permitted          |      | 1.00 |      |      |      |      |      | 1.00  |      |      |      |      |
| Satd. Flow (perm)      |      | 4906 |      |      |      |      |      | 4761  |      |      |      |      |
| Volume (vph)           | 78   | 1863 | 0    | 0    | 0    | 0    | 0    | 1397  | 372  | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 78   | 1863 | 0    | 0    | 0    | 0    | 0    | 1397  | 372  | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0    | 6    | 0    | 0    | 0    | 0    | 0    | 2     | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 1935 | 0    | 0    | 0    | 0    | 0    | 1767  | 0    | 0    | 0    | 0    |
| Parking (#/hr)         | 0    | 0    |      |      |      |      |      | 0     | 0    |      |      |      |
| Turn Type              |      | Perm |      |      |      |      |      |       |      |      |      |      |
| Protected Phases       |      | 2    |      |      |      |      |      | 8     |      |      |      |      |
| Permitted Phases       |      | 2    |      |      |      |      |      |       |      |      |      |      |
| Actuated Green, G (s)  |      | 28.0 |      |      |      |      |      | 26.0  |      |      |      |      |
| Effective Green, g (s) |      | 27.0 |      |      |      |      |      | 25.0  |      |      |      |      |
| Actuated g/C Ratio     |      | 0.45 |      |      |      |      |      | 0.42  |      |      |      |      |
| Clearance Time (s)     |      | 3.0  |      |      |      |      |      | 3.0   |      |      |      |      |
| Lane Grp Cap (vph)     |      | 2208 |      |      |      |      |      | 1984  |      |      |      |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      | c0.37 |      |      |      |      |
| v/s Ratio Perm         |      | 0.39 |      |      |      |      |      |       |      |      |      |      |
| v/c Ratio              |      | 0.88 |      |      |      |      |      | 0.89  |      |      |      |      |
| Uniform Delay, d1      |      | 15.0 |      |      |      |      |      | 16.2  |      |      |      |      |
| Progression Factor     |      | 0.60 |      |      |      |      |      | 0.35  |      |      |      |      |
| Incremental Delay, d2  |      | 3.6  |      |      |      |      |      | 4.7   |      |      |      |      |
| Delay (s)              |      | 12.6 |      |      |      |      |      | 10.3  |      |      |      |      |
| Level of Service       |      | B    |      |      |      |      |      | B     |      |      |      |      |
| Approach Delay (s)     |      | 12.6 |      |      | 0.0  |      |      | 10.3  |      |      | 0.0  |      |
| Approach LOS           |      | B    |      |      | A    |      |      | B     |      |      | A    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.5  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.88  |                      |     |
| Actuated Cycle Length (s)         | 60.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 79.5% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 2074: J Street & 19th Street

4/4/2005



| Movement                          | EBL  | EBT   | EBR   | WBL  | WBT                  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |  |
|-----------------------------------|------|-------|-------|------|----------------------|------|------|------|------|------|------|------|--|
| Lane Configurations               |      | ↑↑↑   |       |      |                      |      |      |      |      |      | ↑↑↑  |      |  |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900  | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |  |
| Total Lost time (s)               |      | 4.0   |       |      |                      |      |      |      |      |      | 4.0  |      |  |
| Lane Util. Factor                 |      | 0.91  |       |      |                      |      |      |      |      |      | 0.91 |      |  |
| Frt                               |      | 0.96  |       |      |                      |      |      |      |      |      | 1.00 |      |  |
| Flt Protected                     |      | 1.00  |       |      |                      |      |      |      |      |      | 0.99 |      |  |
| Satd. Flow (prot)                 |      | 4722  |       |      |                      |      |      |      |      |      | 4843 |      |  |
| Flt Permitted                     |      | 1.00  |       |      |                      |      |      |      |      |      | 0.99 |      |  |
| Satd. Flow (perm)                 |      | 4722  |       |      |                      |      |      |      |      |      | 4843 |      |  |
| Volume (vph)                      | 0    | 1674  | 597   | 0    | 0                    | 0    | 0    | 0    | 0    | 197  | 458  | 0    |  |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00  | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |  |
| Adj. Flow (vph)                   | 0    | 1674  | 597   | 0    | 0                    | 0    | 0    | 0    | 0    | 197  | 458  | 0    |  |
| RTOR Reduction (vph)              | 0    | 45    | 0     | 0    | 0                    | 0    | 0    | 0    | 0    | 0    | 18   | 0    |  |
| Lane Group Flow (vph)             | 0    | 2226  | 0     | 0    | 0                    | 0    | 0    | 0    | 0    | 0    | 637  | 0    |  |
| Parking (#/hr)                    |      | 0     | 0     |      |                      |      |      |      |      | 0    | 0    |      |  |
| Turn Type                         |      |       |       |      |                      |      |      |      |      | Perm |      |      |  |
| Protected Phases                  |      | 2     |       |      |                      |      |      |      |      |      |      | 4    |  |
| Permitted Phases                  |      |       |       |      |                      |      |      |      |      | 4    |      |      |  |
| Actuated Green, G (s)             |      | 37.0  |       |      |                      |      |      |      |      |      | 17.0 |      |  |
| Effective Green, g (s)            |      | 36.0  |       |      |                      |      |      |      |      |      | 16.0 |      |  |
| Actuated g/C Ratio                |      | 0.60  |       |      |                      |      |      |      |      |      | 0.27 |      |  |
| Clearance Time (s)                |      | 3.0   |       |      |                      |      |      |      |      |      | 3.0  |      |  |
| Lane Grp Cap (vph)                |      | 2833  |       |      |                      |      |      |      |      |      | 1291 |      |  |
| v/s Ratio Prot                    |      | c0.47 |       |      |                      |      |      |      |      |      |      |      |  |
| v/s Ratio Perm                    |      |       |       |      |                      |      |      |      |      |      | 0.13 |      |  |
| v/c Ratio                         |      | 0.79  |       |      |                      |      |      |      |      |      | 0.49 |      |  |
| Uniform Delay, d1                 |      | 9.1   |       |      |                      |      |      |      |      |      | 18.6 |      |  |
| Progression Factor                |      | 1.00  |       |      |                      |      |      |      |      |      | 1.00 |      |  |
| Incremental Delay, d2             |      | 2.3   |       |      |                      |      |      |      |      |      | 1.3  |      |  |
| Delay (s)                         |      | 11.4  |       |      |                      |      |      |      |      |      | 19.9 |      |  |
| Level of Service                  |      | B     |       |      |                      |      |      |      |      |      | B    |      |  |
| Approach Delay (s)                |      | 11.4  |       |      | 0.0                  |      |      | 0.0  |      |      | 19.9 |      |  |
| Approach LOS                      |      | B     |       |      | A                    |      |      | A    |      |      | B    |      |  |
| <b>Intersection Summary</b>       |      |       |       |      |                      |      |      |      |      |      |      |      |  |
| HCM Average Control Delay         |      |       | 13.3  |      | HCM Level of Service |      |      |      |      |      | B    |      |  |
| HCM Volume to Capacity ratio      |      |       | 0.70  |      |                      |      |      |      |      |      |      |      |  |
| Actuated Cycle Length (s)         |      |       | 60.0  |      | Sum of lost time (s) |      |      |      |      |      | 8.0  |      |  |
| Intersection Capacity Utilization |      |       | 65.2% |      | ICU Level of Service |      |      |      |      |      | C    |      |  |
| Analysis Period (min)             |      |       | 15    |      |                      |      |      |      |      |      |      |      |  |
| c Critical Lane Group             |      |       |       |      |                      |      |      |      |      |      |      |      |  |

HCM Signalized Intersection Capacity Analysis  
 2088: L Street & 29th Street

4/4/2005



| Movement               | EBL  | EBT  | EBR  | WBL   | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|------|------|-------|------|------|------|------|------|------|-------|------|
| Lane Configurations    |      |      |      | ↙     | ↑↑   |      |      |      |      |      | ↑↑↑   | ↗    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      |      |      | 4.0   | 4.0  |      |      |      |      |      | 4.0   | 4.0  |
| Lane Util. Factor      |      |      |      | 1.00  | 0.95 |      |      |      |      |      | 0.86  | 0.86 |
| Frt                    |      |      |      | 1.00  | 1.00 |      |      |      |      |      | 1.00  | 0.85 |
| Flt Protected          |      |      |      | 0.95  | 1.00 |      |      |      |      |      | 1.00  | 1.00 |
| Satd. Flow (prot)      |      |      |      | 1770  | 3539 |      |      |      |      |      | 4646  | 1226 |
| Flt Permitted          |      |      |      | 0.95  | 1.00 |      |      |      |      |      | 1.00  | 1.00 |
| Satd. Flow (perm)      |      |      |      | 1770  | 3539 |      |      |      |      |      | 4646  | 1226 |
| Volume (vph)           | 0    | 0    | 0    | 253   | 459  | 0    | 0    | 0    | 0    | 0    | 1406  | 180  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 253   | 459  | 0    | 0    | 0    | 0    | 0    | 1406  | 180  |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 17    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 86   |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 236   | 459  | 0    | 0    | 0    | 0    | 0    | 1406  | 94   |
| Parking (#/hr)         |      |      | 0    |       |      |      |      |      |      |      | 0     | 0    |
| Turn Type              |      |      |      | Perm  |      |      |      |      |      |      |       | Perm |
| Protected Phases       |      |      |      |       | 6    |      |      |      |      |      | 4     |      |
| Permitted Phases       |      |      |      | 6     |      |      |      |      |      |      |       | 4    |
| Actuated Green, G (s)  |      |      |      | 36.0  | 36.0 |      |      |      |      |      | 48.0  | 48.0 |
| Effective Green, g (s) |      |      |      | 35.0  | 35.0 |      |      |      |      |      | 47.0  | 47.0 |
| Actuated g/C Ratio     |      |      |      | 0.39  | 0.39 |      |      |      |      |      | 0.52  | 0.52 |
| Clearance Time (s)     |      |      |      | 3.0   | 3.0  |      |      |      |      |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)     |      |      |      | 688   | 1376 |      |      |      |      |      | 2426  | 640  |
| v/s Ratio Prot         |      |      |      |       | 0.13 |      |      |      |      |      | c0.30 |      |
| v/s Ratio Perm         |      |      |      | c0.13 |      |      |      |      |      |      |       | 0.08 |
| v/c Ratio              |      |      |      | 0.34  | 0.33 |      |      |      |      |      | 0.58  | 0.15 |
| Uniform Delay, d1      |      |      |      | 19.4  | 19.3 |      |      |      |      |      | 14.7  | 11.1 |
| Progression Factor     |      |      |      | 0.42  | 0.49 |      |      |      |      |      | 0.67  | 0.00 |
| Incremental Delay, d2  |      |      |      | 1.3   | 0.6  |      |      |      |      |      | 0.9   | 0.4  |
| Delay (s)              |      |      |      | 9.5   | 10.0 |      |      |      |      |      | 10.7  | 0.4  |
| Level of Service       |      |      |      | A     | B    |      |      |      |      |      | B     | A    |
| Approach Delay (s)     |      | 0.0  |      |       | 9.8  |      | 0.0  |      |      |      | 9.5   |      |
| Approach LOS           |      | A    |      |       | A    |      | A    |      |      |      | A     |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 9.6   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.48  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 49.2% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
 2239: L Street & Alhambra

4/4/2005



| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations       |      |      |      |      | ↕    |      |      | ↕    |      |      | ↕    | ↗    |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |      |      |      |      | 4.0  |      |      | 4.0  |      |      | 4.0  | 4.0  |
| Lane Util. Factor         |      |      |      |      | 1.00 |      |      | 1.00 |      |      | 1.00 | 1.00 |
| Fr <sub>t</sub>           |      |      |      |      | 0.98 |      |      | 0.98 |      |      | 1.00 | 0.85 |
| Fl <sub>t</sub> Protected |      |      |      |      | 0.99 |      |      | 0.99 |      |      | 1.00 | 1.00 |
| Satd. Flow (prot)         |      |      |      |      | 1625 |      |      | 1626 |      |      | 1857 | 1425 |
| Fl <sub>t</sub> Permitted |      |      |      |      | 0.99 |      |      | 0.68 |      |      | 0.93 | 1.00 |
| Satd. Flow (perm)         |      |      |      |      | 1625 |      |      | 1119 |      |      | 1738 | 1425 |
| Volume (vph)              | 0    | 0    | 0    | 62   | 224  | 56   | 131  | 528  | 128  | 42   | 698  | 296  |
| Peak-hour factor, PHF     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 0    | 0    | 0    | 62   | 224  | 56   | 131  | 528  | 128  | 42   | 698  | 296  |
| RTOR Reduction (vph)      | 0    | 0    | 0    | 0    | 8    | 0    | 0    | 8    | 0    | 0    | 0    | 82   |
| Lane Group Flow (vph)     | 0    | 0    | 0    | 0    | 334  | 0    | 0    | 779  | 0    | 0    | 740  | 214  |
| Parking (#/hr)            |      |      |      | 0    | 0    | 0    | 0    | 0    | 0    |      |      | 0    |
| Turn Type                 |      |      |      |      | Perm |      |      | Perm |      |      | Perm | Perm |
| Protected Phases          |      |      |      |      | 6    |      |      | 8    |      |      | 4    |      |
| Permitted Phases          |      |      |      | 6    |      |      | 8    |      |      | 4    |      | 4    |
| Actuated Green, G (s)     |      |      |      |      | 20.0 |      |      | 64.0 |      |      | 64.0 | 64.0 |
| Effective Green, g (s)    |      |      |      |      | 19.0 |      |      | 63.0 |      |      | 63.0 | 63.0 |
| Actuated g/C Ratio        |      |      |      |      | 0.21 |      |      | 0.70 |      |      | 0.70 | 0.70 |
| Clearance Time (s)        |      |      |      |      | 3.0  |      |      | 3.0  |      |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)        |      |      |      |      | 343  |      |      | 783  |      |      | 1217 | 998  |
| v/s Ratio Prot            |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm            |      |      |      |      | 0.21 |      |      | 0.70 |      |      | 0.43 | 0.15 |
| v/c Ratio                 |      |      |      |      | 0.97 |      |      | 1.00 |      |      | 0.61 | 0.21 |
| Uniform Delay, d1         |      |      |      |      | 35.3 |      |      | 13.3 |      |      | 7.1  | 4.8  |
| Progression Factor        |      |      |      |      | 1.00 |      |      | 0.62 |      |      | 0.96 | 2.11 |
| Incremental Delay, d2     |      |      |      |      | 42.5 |      |      | 22.3 |      |      | 2.0  | 0.4  |
| Delay (s)                 |      |      |      |      | 77.7 |      |      | 30.6 |      |      | 8.7  | 10.5 |
| Level of Service          |      |      |      |      | E    |      |      | C    |      |      | A    | B    |
| Approach Delay (s)        |      | 0.0  |      |      | 77.7 |      |      | 30.6 |      |      | 9.2  |      |
| Approach LOS              |      | A    |      |      | E    |      |      | C    |      |      | A    |      |

**Intersection Summary**

|                                   |        |                      |     |
|-----------------------------------|--------|----------------------|-----|
| HCM Average Control Delay         | 27.8   | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 0.99   |                      |     |
| Actuated Cycle Length (s)         | 90.0   | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 110.5% | ICU Level of Service | H   |
| Analysis Period (min)             | 15     |                      |     |
| c Critical Lane Group             |        |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3426: L Street & 19th Street

4/4/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT                  | SBR  |
|-----------------------------------|------|------|-------|------|------|------|------|------|------|------|----------------------|------|
| Lane Configurations               |      |      |       |      | ↑↑   |      |      |      |      |      | ↑↑↑                  |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900                 | 1900 |
| Total Lost time (s)               |      |      |       |      | 4.0  |      |      |      |      |      | 4.0                  |      |
| Lane Util. Factor                 |      |      |       |      | 0.95 |      |      |      |      |      | 0.91                 |      |
| Frt                               |      |      |       |      | 1.00 |      |      |      |      |      | 1.00                 |      |
| Flt Protected                     |      |      |       |      | 0.99 |      |      |      |      |      | 1.00                 |      |
| Satd. Flow (prot)                 |      |      |       |      | 3332 |      |      |      |      |      | 4908                 |      |
| Flt Permitted                     |      |      |       |      | 0.99 |      |      |      |      |      | 1.00                 |      |
| Satd. Flow (perm)                 |      |      |       |      | 3332 |      |      |      |      |      | 4908                 |      |
| Volume (vph)                      | 0    | 0    | 0     | 174  | 791  | 0    | 0    | 0    | 0    | 0    | 1253                 | 13   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00                 | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 174  | 791  | 0    | 0    | 0    | 0    | 0    | 1253                 | 13   |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 0    | 6    | 0    | 0    | 0    | 0    | 0    | 2                    | 0    |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 0    | 959  | 0    | 0    | 0    | 0    | 0    | 1264                 | 0    |
| Parking (#/hr)                    |      | 0    | 0     | 0    | 0    |      |      |      |      | 0    | 0                    | 0    |
| Turn Type                         |      |      |       |      | Perm |      |      |      |      |      |                      |      |
| Protected Phases                  |      |      |       |      | 6    |      |      |      |      |      | 4                    |      |
| Permitted Phases                  |      |      |       |      | 6    |      |      |      |      |      |                      |      |
| Actuated Green, G (s)             |      |      |       |      | 30.0 |      |      |      |      |      | 24.0                 |      |
| Effective Green, g (s)            |      |      |       |      | 29.0 |      |      |      |      |      | 23.0                 |      |
| Actuated g/C Ratio                |      |      |       |      | 0.48 |      |      |      |      |      | 0.38                 |      |
| Clearance Time (s)                |      |      |       |      | 3.0  |      |      |      |      |      | 3.0                  |      |
| Lane Grp Cap (vph)                |      |      |       |      | 1610 |      |      |      |      |      | 1881                 |      |
| v/s Ratio Prot                    |      |      |       |      |      |      |      |      |      |      | c0.26                |      |
| v/s Ratio Perm                    |      |      |       |      | 0.29 |      |      |      |      |      |                      |      |
| v/c Ratio                         |      |      |       |      | 0.60 |      |      |      |      |      | 0.67                 |      |
| Uniform Delay, d1                 |      |      |       |      | 11.2 |      |      |      |      |      | 15.4                 |      |
| Progression Factor                |      |      |       |      | 0.33 |      |      |      |      |      | 0.76                 |      |
| Incremental Delay, d2             |      |      |       |      | 1.2  |      |      |      |      |      | 1.6                  |      |
| Delay (s)                         |      |      |       |      | 5.0  |      |      |      |      |      | 13.3                 |      |
| Level of Service                  |      |      |       |      | A    |      |      |      |      |      | B                    |      |
| Approach Delay (s)                |      | 0.0  |       |      | 5.0  |      |      | 0.0  |      |      | 13.3                 |      |
| Approach LOS                      |      | A    |       |      | A    |      |      | A    |      |      | B                    |      |
| <b>Intersection Summary</b>       |      |      |       |      |      |      |      |      |      |      |                      |      |
| HCM Average Control Delay         |      |      | 9.7   |      |      |      |      |      |      |      | HCM Level of Service | A    |
| HCM Volume to Capacity ratio      |      |      | 0.63  |      |      |      |      |      |      |      |                      |      |
| Actuated Cycle Length (s)         |      |      | 60.0  |      |      |      |      |      |      |      | Sum of lost time (s) | 8.0  |
| Intersection Capacity Utilization |      |      | 58.1% |      |      |      |      |      |      |      | ICU Level of Service | B    |
| Analysis Period (min)             |      |      | 15    |      |      |      |      |      |      |      |                      |      |
| c Critical Lane Group             |      |      |       |      |      |      |      |      |      |      |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3427: L Street & 26th St

4/4/2005



| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|---------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations       |      |      |      |      | ↕↔   |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |      |      |      |      | 4.0  |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor         |      |      |      |      | 0.95 |      |      | 1.00  |      |      | 1.00 |      |
| Fr <sub>t</sub>           |      |      |      |      | 1.00 |      |      | 1.00  |      |      | 0.95 |      |
| Fl <sub>t</sub> Protected |      |      |      |      | 1.00 |      |      | 0.98  |      |      | 1.00 |      |
| Satd. Flow (prot)         |      |      |      |      | 3347 |      |      | 1643  |      |      | 1593 |      |
| Fl <sub>t</sub> Permitted |      |      |      |      | 1.00 |      |      | 0.89  |      |      | 1.00 |      |
| Satd. Flow (perm)         |      |      |      |      | 3347 |      |      | 1497  |      |      | 1593 |      |
| Volume (vph)              | 0    | 0    | 0    | 14   | 708  | 18   | 35   | 52    | 0    | 0    | 63   | 37   |
| Peak-hour factor, PHF     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 0    | 0    | 0    | 14   | 708  | 18   | 35   | 52    | 0    | 0    | 63   | 37   |
| RTOR Reduction (vph)      | 0    | 0    | 0    | 0    | 3    | 0    | 0    | 0     | 0    | 0    | 23   | 0    |
| Lane Group Flow (vph)     | 0    | 0    | 0    | 0    | 737  | 0    | 0    | 87    | 0    | 0    | 77   | 0    |
| Parking (#/hr)            |      |      |      | 0    | 0    | 0    | 0    | 0     |      |      | 0    | 0    |
| Turn Type                 |      |      |      |      | Perm |      |      | Perm  |      |      |      |      |
| Protected Phases          |      |      |      |      |      | 8    |      | 2     |      |      | 6    |      |
| Permitted Phases          |      |      |      |      | 8    |      | 2    |       |      |      |      |      |
| Actuated Green, G (s)     |      |      |      |      | 30.0 |      |      | 24.0  |      |      | 24.0 |      |
| Effective Green, g (s)    |      |      |      |      | 29.0 |      |      | 23.0  |      |      | 23.0 |      |
| Actuated g/C Ratio        |      |      |      |      | 0.48 |      |      | 0.38  |      |      | 0.38 |      |
| Clearance Time (s)        |      |      |      |      | 3.0  |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)        |      |      |      |      | 1618 |      |      | 574   |      |      | 611  |      |
| v/s Ratio Prot            |      |      |      |      |      |      |      |       |      |      | 0.05 |      |
| v/s Ratio Perm            |      |      |      |      | 0.22 |      |      | c0.06 |      |      |      |      |
| v/c Ratio                 |      |      |      |      | 0.46 |      |      | 0.15  |      |      | 0.13 |      |
| Uniform Delay, d1         |      |      |      |      | 10.3 |      |      | 12.1  |      |      | 12.0 |      |
| Progression Factor        |      |      |      |      | 1.00 |      |      | 0.67  |      |      | 1.00 |      |
| Incremental Delay, d2     |      |      |      |      | 0.9  |      |      | 0.5   |      |      | 0.4  |      |
| Delay (s)                 |      |      |      |      | 11.2 |      |      | 8.6   |      |      | 12.4 |      |
| Level of Service          |      |      |      |      | B    |      |      | A     |      |      | B    |      |
| Approach Delay (s)        |      | 0.0  |      |      | 11.2 |      |      | 8.6   |      |      | 12.4 |      |
| Approach LOS              |      | A    |      |      | B    |      |      | A     |      |      | B    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.1  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.32  |                      |     |
| Actuated Cycle Length (s)         | 60.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 38.6% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3428: J Street & 29th St off ramp

4/4/2005



| Movement               | EBT   | EBR  | SBL   | SBT   | SWL2  | SWL   |
|------------------------|-------|------|-------|-------|-------|-------|
| Lane Configurations    | ↑↑↑   |      |       | ↑↑↑   |       | ↘     |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900  | 1900  | 1900  | 1900  |
| Total Lost time (s)    | 4.0   |      |       | 4.0   |       | 4.0   |
| Lane Util. Factor      | 0.91  |      |       | 0.91  |       | 0.97  |
| Frt                    | 0.96  |      |       | 1.00  |       | 1.00  |
| Flt Protected          | 1.00  |      |       | 0.99  |       | 0.95  |
| Satd. Flow (prot)      | 4704  |      |       | 4874  |       | 3433  |
| Flt Permitted          | 1.00  |      |       | 0.99  |       | 0.95  |
| Satd. Flow (perm)      | 4704  |      |       | 4874  |       | 3433  |
| Volume (vph)           | 1402  | 564  | 82    | 400   | 105   | 380   |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)        | 1402  | 564  | 82    | 400   | 105   | 380   |
| RTOR Reduction (vph)   | 32    | 0    | 0     | 0     | 0     | 29    |
| Lane Group Flow (vph)  | 1934  | 0    | 0     | 482   | 0     | 456   |
| Parking (#/hr)         | 0     | 0    |       | 0     |       |       |
| Turn Type              |       |      | Split |       | Split |       |
| Protected Phases       | 2     |      | 8     | 8     | 4     | 4     |
| Permitted Phases       |       |      |       |       |       |       |
| Actuated Green, G (s)  | 46.0  |      |       | 17.0  |       | 18.0  |
| Effective Green, g (s) | 45.0  |      |       | 16.0  |       | 17.0  |
| Actuated g/C Ratio     | 0.50  |      |       | 0.18  |       | 0.19  |
| Clearance Time (s)     | 3.0   |      |       | 3.0   |       | 3.0   |
| Lane Grp Cap (vph)     | 2352  |      |       | 866   |       | 648   |
| v/s Ratio Prot         | c0.41 |      |       | c0.10 |       | c0.13 |
| v/s Ratio Perm         |       |      |       |       |       |       |
| v/c Ratio              | 0.82  |      |       | 0.56  |       | 0.70  |
| Uniform Delay, d1      | 19.1  |      |       | 33.8  |       | 34.1  |
| Progression Factor     | 0.35  |      |       | 1.00  |       | 1.00  |
| Incremental Delay, d2  | 2.2   |      |       | 2.6   |       | 6.3   |
| Delay (s)              | 8.9   |      |       | 36.3  |       | 40.4  |
| Level of Service       | A     |      |       | D     |       | D     |
| Approach Delay (s)     | 8.9   |      |       | 36.3  |       | 40.4  |
| Approach LOS           | A     |      |       | D     |       | D     |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 18.6  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.74  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 72.9% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

# HCM Signalized Intersection Capacity Analysis

3429: J Street & Alhambra

4/4/2005



| Movement                          | EBL   | EBT  | EBR  | WBL   | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|-------|------|------|-------|------|------|------|------|------|------|------|------|
| Lane Configurations               | ↖     | ↕    |      | ↖     | ↕    | ↗    |      | ↕    |      |      | ↕    |      |
| Ideal Flow (vphpl)                | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               | 4.0   | 4.0  |      | 4.0   | 4.0  | 4.0  |      | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor                 | 1.00  | 0.95 |      | 0.95  | 0.95 | 1.00 |      | 0.95 |      |      | 0.95 |      |
| Fr <sub>t</sub>                   | 1.00  | 0.97 |      | 1.00  | 1.00 | 0.85 |      | 0.94 |      |      | 1.00 |      |
| Fl <sub>t</sub> Protected         | 0.95  | 1.00 |      | 0.95  | 0.95 | 1.00 |      | 1.00 |      |      | 0.99 |      |
| Satd. Flow (prot)                 | 1770  | 3258 |      | 1681  | 1681 | 1425 |      | 3173 |      |      | 3343 |      |
| Fl <sub>t</sub> Permitted         | 0.95  | 1.00 |      | 0.95  | 0.95 | 1.00 |      | 1.00 |      |      | 0.75 |      |
| Satd. Flow (perm)                 | 1770  | 3258 |      | 1681  | 1681 | 1425 |      | 3173 |      |      | 2519 |      |
| Volume (vph)                      | 160   | 938  | 243  | 648   | 0    | 270  | 0    | 285  | 171  | 51   | 381  | 0    |
| Peak-hour factor, PHF             | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 160   | 938  | 243  | 648   | 0    | 270  | 0    | 285  | 171  | 51   | 381  | 0    |
| RTOR Reduction (vph)              | 0     | 25   | 0    | 0     | 0    | 204  | 0    | 99   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 160   | 1156 | 0    | 324   | 324  | 66   | 0    | 357  | 0    | 0    | 432  | 0    |
| Parking (#/hr)                    |       | 0    | 0    |       |      | 0    |      | 0    | 0    |      | 0    |      |
| Turn Type                         | Split |      |      | Split |      |      | Perm |      |      |      | Perm |      |
| Protected Phases                  | 2     | 2    |      | 6     | 6    |      |      | 8    |      |      | 4    |      |
| Permitted Phases                  |       |      |      |       |      | 6    |      |      |      | 4    |      |      |
| Actuated Green, G (s)             | 39.0  | 39.0 |      | 23.0  | 23.0 | 23.0 |      | 19.0 |      |      | 19.0 |      |
| Effective Green, g (s)            | 38.0  | 38.0 |      | 22.0  | 22.0 | 22.0 |      | 18.0 |      |      | 18.0 |      |
| Actuated g/C Ratio                | 0.42  | 0.42 |      | 0.24  | 0.24 | 0.24 |      | 0.20 |      |      | 0.20 |      |
| Clearance Time (s)                | 3.0   | 3.0  |      | 3.0   | 3.0  | 3.0  |      | 3.0  |      |      | 3.0  |      |
| Lane Grp Cap (vph)                | 747   | 1376 |      | 411   | 411  | 348  |      | 635  |      |      | 504  |      |
| v/s Ratio Prot                    | 0.09  | 0.35 |      | 0.19  | 0.19 |      |      | 0.11 |      |      |      |      |
| v/s Ratio Perm                    |       |      |      |       |      | 0.05 |      |      |      |      | 0.17 |      |
| v/c Ratio                         | 0.21  | 0.84 |      | 0.79  | 0.79 | 0.19 |      | 0.56 |      |      | 0.86 |      |
| Uniform Delay, d <sub>1</sub>     | 16.5  | 23.3 |      | 31.8  | 31.8 | 26.9 |      | 32.4 |      |      | 34.8 |      |
| Progression Factor                | 0.44  | 0.43 |      | 1.00  | 1.00 | 1.00 |      | 0.74 |      |      | 1.00 |      |
| Incremental Delay, d <sub>2</sub> | 0.6   | 5.9  |      | 14.2  | 14.2 | 1.2  |      | 3.3  |      |      | 17.0 |      |
| Delay (s)                         | 7.8   | 15.9 |      | 46.0  | 46.0 | 28.1 |      | 27.5 |      |      | 51.7 |      |
| Level of Service                  | A     | B    |      | D     | D    | C    |      | C    |      |      | D    |      |
| Approach Delay (s)                |       | 15.0 |      |       | 40.8 |      |      | 27.5 |      |      | 51.7 |      |
| Approach LOS                      |       | B    |      |       | D    |      |      | C    |      |      | D    |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 29.4  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.83  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 90.3% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3435: N Street & 29th Street

4/4/2005



| Movement               | EBT   | EBR  | EBR2 | WBL2  | WBL   | WBT   | SBL2 | SBL   | SBT  | SBR  |
|------------------------|-------|------|------|-------|-------|-------|------|-------|------|------|
| Lane Configurations    | ↑     | ↔    |      |       | ↔     | ↔     |      | ↔     | ↑↓   |      |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900  | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    | 4.0   | 4.0  |      |       | 4.0   | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor      | 1.00  | 1.00 |      |       | 0.95  | 0.95  |      | 0.97  | 0.95 |      |
| Frnt                   | 1.00  | 0.85 |      |       | 1.00  | 1.00  |      | 1.00  | 1.00 |      |
| Flt Protected          | 1.00  | 1.00 |      |       | 0.95  | 0.99  |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)      | 1676  | 1425 |      |       | 1681  | 1759  |      | 3433  | 3362 |      |
| Flt Permitted          | 1.00  | 1.00 |      |       | 0.95  | 0.99  |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)      | 1676  | 1425 |      |       | 1681  | 1759  |      | 3433  | 3362 |      |
| Volume (vph)           | 481   | 130  | 186  | 132   | 171   | 252   | 162  | 1127  | 707  | 1    |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 481   | 130  | 186  | 132   | 171   | 252   | 162  | 1127  | 707  | 1    |
| RTOR Reduction (vph)   | 0     | 57   | 0    | 0     | 0     | 0     | 0    | 0     | 0    | 0    |
| Lane Group Flow (vph)  | 481   | 259  | 0    | 0     | 270   | 285   | 0    | 1289  | 708  | 0    |
| Parking (#/hr)         | 0     | 0    | 0    |       |       |       |      |       | 0    |      |
| Turn Type              |       | Perm |      | Split | Split |       | Perm | Perm  |      |      |
| Protected Phases       | 4     |      |      | 8     | 8     | 8     |      |       | 6    |      |
| Permitted Phases       |       | 4    |      |       |       |       | 6    | 6     |      |      |
| Actuated Green, G (s)  | 28.0  | 28.0 |      |       | 16.0  | 16.0  |      | 37.0  | 37.0 |      |
| Effective Green, g (s) | 27.0  | 27.0 |      |       | 15.0  | 15.0  |      | 36.0  | 36.0 |      |
| Actuated g/C Ratio     | 0.30  | 0.30 |      |       | 0.17  | 0.17  |      | 0.40  | 0.40 |      |
| Clearance Time (s)     | 3.0   | 3.0  |      |       | 3.0   | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     | 503   | 428  |      |       | 280   | 293   |      | 1373  | 1345 |      |
| v/s Ratio Prot         | c0.29 |      |      |       | 0.16  | c0.16 |      |       | 0.21 |      |
| v/s Ratio Perm         |       | 0.18 |      |       |       |       |      | c0.38 |      |      |
| v/c Ratio              | 0.96  | 0.60 |      |       | 0.96  | 0.97  |      | 0.94  | 0.53 |      |
| Uniform Delay, d1      | 30.9  | 26.9 |      |       | 37.2  | 37.3  |      | 25.9  | 20.5 |      |
| Progression Factor     | 0.73  | 0.62 |      |       | 1.01  | 1.27  |      | 0.64  | 0.70 |      |
| Incremental Delay, d2  | 27.5  | 5.2  |      |       | 42.2  | 41.2  |      | 9.2   | 0.9  |      |
| Delay (s)              | 50.1  | 21.9 |      |       | 79.7  | 88.6  |      | 25.8  | 15.3 |      |
| Level of Service       | D     | C    |      |       | E     | F     |      | C     | B    |      |
| Approach Delay (s)     | 38.9  |      |      |       |       | 84.3  |      |       | 22.1 |      |
| Approach LOS           | D     |      |      |       |       | F     |      |       | C    |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 36.4  | HCM Level of Service | D    |
| HCM Volume to Capacity ratio      | 0.95  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 87.1% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3436: Capitol & Alhambra

4/4/2005



| Movement               | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL  | NBT  | NBR  | SBL   | SBT  | SBR  |
|------------------------|-------|-------|------|-------|-------|------|------|------|------|-------|------|------|
| Lane Configurations    |       | ↔     |      |       | ↔     |      | ↗    | ↖    | ↗    | ↖     | ↖    | ↗    |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    |       | 4.0   |      |       | 4.0   |      | 4.0  | 4.0  | 4.0  | 4.0   | 4.0  | 4.0  |
| Lane Util. Factor      |       | 0.95  |      |       | 0.95  |      | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Fr't                   |       | 0.99  |      |       | 0.97  |      | 1.00 | 1.00 | 0.85 | 1.00  | 1.00 | 0.85 |
| Flt Protected          |       | 0.99  |      |       | 1.00  |      | 0.95 | 1.00 | 1.00 | 0.95  | 1.00 | 1.00 |
| Satd. Flow (prot)      |       | 3315  |      |       | 3243  |      | 1593 | 1676 | 1425 | 1593  | 1676 | 1425 |
| Flt Permitted          |       | 0.99  |      |       | 1.00  |      | 0.30 | 1.00 | 1.00 | 0.23  | 1.00 | 1.00 |
| Satd. Flow (perm)      |       | 3315  |      |       | 3243  |      | 498  | 1676 | 1425 | 387   | 1676 | 1425 |
| Volume (vph)           | 69    | 442   | 28   | 49    | 615   | 185  | 54   | 550  | 81   | 144   | 480  | 82   |
| Peak-hour factor, PHF  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 69    | 442   | 28   | 49    | 615   | 185  | 54   | 550  | 81   | 144   | 480  | 82   |
| RTOR Reduction (vph)   | 0     | 4     | 0    | 0     | 29    | 0    | 0    | 0    | 29   | 0     | 0    | 34   |
| Lane Group Flow (vph)  | 0     | 535   | 0    | 0     | 820   | 0    | 54   | 550  | 52   | 144   | 480  | 48   |
| Parking (#/hr)         | 0     | 0     | 0    | 0     | 0     | 0    | 0    | 0    | 0    | 0     | 0    | 0    |
| Turn Type              | Split |       |      | Split |       |      | Perm |      | Perm | Perm  |      | Perm |
| Protected Phases       | 4     | 4     |      | 8     | 8     |      |      | 2    |      |       |      | 6    |
| Permitted Phases       |       |       |      |       |       |      | 2    |      | 2    | 6     |      | 6    |
| Actuated Green, G (s)  |       | 17.0  |      |       | 25.0  |      | 39.0 | 39.0 | 39.0 | 39.0  | 39.0 | 39.0 |
| Effective Green, g (s) |       | 16.0  |      |       | 24.0  |      | 38.0 | 38.0 | 38.0 | 38.0  | 38.0 | 38.0 |
| Actuated g/C Ratio     |       | 0.18  |      |       | 0.27  |      | 0.42 | 0.42 | 0.42 | 0.42  | 0.42 | 0.42 |
| Clearance Time (s)     |       | 3.0   |      |       | 3.0   |      | 3.0  | 3.0  | 3.0  | 3.0   | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |       | 589   |      |       | 865   |      | 210  | 708  | 602  | 163   | 708  | 602  |
| v/s Ratio Prot         |       | c0.16 |      |       | c0.25 |      |      | 0.33 |      |       | 0.29 |      |
| v/s Ratio Perm         |       |       |      |       |       |      | 0.11 |      | 0.04 | c0.37 |      | 0.03 |
| v/c Ratio              |       | 0.91  |      |       | 0.95  |      | 0.26 | 0.78 | 0.09 | 0.88  | 0.68 | 0.08 |
| Uniform Delay, d1      |       | 36.3  |      |       | 32.4  |      | 16.9 | 22.4 | 15.6 | 24.0  | 21.0 | 15.5 |
| Progression Factor     |       | 0.72  |      |       | 1.00  |      | 0.96 | 0.82 | 1.05 | 1.03  | 1.04 | 0.95 |
| Incremental Delay, d2  |       | 19.9  |      |       | 20.4  |      | 1.4  | 4.1  | 0.1  | 37.5  | 4.0  | 0.2  |
| Delay (s)              |       | 46.2  |      |       | 52.8  |      | 17.6 | 22.5 | 16.6 | 62.1  | 25.8 | 15.0 |
| Level of Service       |       | D     |      |       | D     |      | B    | C    | B    | E     | C    | B    |
| Approach Delay (s)     |       | 46.2  |      |       | 52.8  |      |      | 21.4 |      |       | 31.9 |      |
| Approach LOS           |       | D     |      |       | D     |      |      | C    |      |       | C    |      |

| Intersection Summary              |       |                           |
|-----------------------------------|-------|---------------------------|
| HCM Average Control Delay         | 38.5  | HCM Level of Service D    |
| HCM Volume to Capacity ratio      | 0.91  |                           |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) 12.0 |
| Intersection Capacity Utilization | 89.7% | ICU Level of Service E    |
| Analysis Period (min)             | 15    |                           |
| c Critical Lane Group             |       |                           |

HCM Signalized Intersection Capacity Analysis  
 3437: P Street & 29th St off ramp

4/4/2005



| Movement               | WBL  | WBT   | SBT   | SBR  | SWL  | SWR   |
|------------------------|------|-------|-------|------|------|-------|
| Lane Configurations    | ↙    | ↑↑    | ↑↑↑   |      | ↘↘   | ↗     |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900  | 1900 | 1900 | 1900  |
| Total Lost time (s)    | 4.0  | 4.0   | 4.0   |      | 4.0  | 4.0   |
| Lane Util. Factor      | 1.00 | 0.95  | 0.91  |      | 0.97 | 0.91  |
| Frt                    | 1.00 | 1.00  | 0.98  |      | 0.99 | 0.85  |
| Flt Protected          | 0.95 | 1.00  | 1.00  |      | 0.95 | 1.00  |
| Satd. Flow (prot)      | 1593 | 3362  | 4819  |      | 3426 | 1441  |
| Flt Permitted          | 0.95 | 1.00  | 1.00  |      | 0.95 | 1.00  |
| Satd. Flow (perm)      | 1593 | 3362  | 4819  |      | 3426 | 1441  |
| Volume (vph)           | 153  | 836   | 848   | 128  | 357  | 173   |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  |
| Adj. Flow (vph)        | 153  | 836   | 848   | 128  | 357  | 173   |
| RTOR Reduction (vph)   | 43   | 0     | 22    | 0    | 0    | 0     |
| Lane Group Flow (vph)  | 110  | 836   | 954   | 0    | 373  | 157   |
| Parking (#/hr)         | 0    | 0     | 0     | 0    |      |       |
| Turn Type              | Perm |       |       |      |      | Perm  |
| Protected Phases       |      | 6     | 7     |      | 8    |       |
| Permitted Phases       | 6    |       |       |      |      | 8     |
| Actuated Green, G (s)  | 34.0 | 34.0  | 26.0  |      | 21.0 | 21.0  |
| Effective Green, g (s) | 33.0 | 33.0  | 25.0  |      | 20.0 | 20.0  |
| Actuated g/C Ratio     | 0.37 | 0.37  | 0.28  |      | 0.22 | 0.22  |
| Clearance Time (s)     | 3.0  | 3.0   | 3.0   |      | 3.0  | 3.0   |
| Lane Grp Cap (vph)     | 584  | 1233  | 1339  |      | 761  | 320   |
| v/s Ratio Prot         |      | c0.25 | c0.20 |      | 0.11 |       |
| v/s Ratio Perm         | 0.07 |       |       |      |      | c0.11 |
| v/c Ratio              | 0.19 | 0.68  | 0.71  |      | 0.49 | 0.49  |
| Uniform Delay, d1      | 19.4 | 24.0  | 29.3  |      | 30.5 | 30.6  |
| Progression Factor     | 0.03 | 0.30  | 0.61  |      | 1.00 | 1.00  |
| Incremental Delay, d2  | 0.6  | 2.3   | 2.6   |      | 2.3  | 5.3   |
| Delay (s)              | 1.1  | 9.5   | 20.3  |      | 32.8 | 35.8  |
| Level of Service       | A    | A     | C     |      | C    | D     |
| Approach Delay (s)     |      | 8.2   | 20.3  |      | 33.7 |       |
| Approach LOS           |      | A     | C     |      | C    |       |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 18.3  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.64  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 64.3% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |



HCM Signalized Intersection Capacity Analysis  
 3438: P Street & Alhambra

4/4/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL   | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|-------|------|-------|------|------|
| Lane Configurations    |      |      |      |      | ↔↔↔  |      | ↗    | ↘     |      | ↗     | ↘    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      | 4.0  | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor      |      |      |      |      | 0.91 |      | 1.00 | 1.00  |      | 1.00  | 1.00 |      |
| Frt                    |      |      |      |      | 0.98 |      | 1.00 | 0.94  |      | 1.00  | 0.97 |      |
| Flt Protected          |      |      |      |      | 1.00 |      | 0.95 | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)      |      |      |      |      | 4953 |      | 1770 | 1742  |      | 1770  | 1814 |      |
| Flt Permitted          |      |      |      |      | 1.00 |      | 0.95 | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)      |      |      |      |      | 4953 |      | 1770 | 1742  |      | 1770  | 1814 |      |
| Volume (vph)           | 0    | 0    | 0    | 73   | 945  | 185  | 124  | 391   | 297  | 310   | 410  | 86   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 73   | 945  | 185  | 124  | 391   | 297  | 310   | 410  | 86   |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 29   | 0    | 0    | 31    | 0    | 0     | 8    | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 1174 | 0    | 124  | 657   | 0    | 310   | 488  | 0    |
| Turn Type              |      |      |      | Perm |      |      | Prot |       |      | Prot  |      |      |
| Protected Phases       |      |      |      |      | 6    |      | 3    | 8     |      | 7     | 4    |      |
| Permitted Phases       |      |      |      | 6    |      |      |      |       |      |       |      |      |
| Actuated Green, G (s)  |      |      |      |      | 23.0 |      | 13.0 | 40.0  |      | 18.0  | 45.0 |      |
| Effective Green, g (s) |      |      |      |      | 22.0 |      | 12.0 | 39.0  |      | 17.0  | 44.0 |      |
| Actuated g/C Ratio     |      |      |      |      | 0.24 |      | 0.13 | 0.43  |      | 0.19  | 0.49 |      |
| Clearance Time (s)     |      |      |      |      | 3.0  |      | 3.0  | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     |      |      |      |      | 1211 |      | 236  | 755   |      | 334   | 887  |      |
| v/s Ratio Prot         |      |      |      |      |      |      | 0.07 | c0.38 |      | c0.18 | 0.27 |      |
| v/s Ratio Perm         |      |      |      | 0.24 |      |      |      |       |      |       |      |      |
| v/c Ratio              |      |      |      |      | 0.97 |      | 0.53 | 0.87  |      | 0.93  | 0.55 |      |
| Uniform Delay, d1      |      |      |      |      | 33.7 |      | 36.3 | 23.2  |      | 35.9  | 16.1 |      |
| Progression Factor     |      |      |      |      | 1.00 |      | 1.00 | 1.00  |      | 0.78  | 0.62 |      |
| Incremental Delay, d2  |      |      |      |      | 19.5 |      | 8.1  | 13.1  |      | 20.8  | 1.2  |      |
| Delay (s)              |      |      |      |      | 53.2 |      | 44.5 | 36.3  |      | 48.8  | 11.1 |      |
| Level of Service       |      |      |      |      | D    |      | D    | D     |      | D     | B    |      |
| Approach Delay (s)     |      | 0.0  |      |      | 53.2 |      |      | 37.6  |      |       | 25.6 |      |
| Approach LOS           |      | A    |      |      | D    |      |      | D     |      |       | C    |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 40.8  | HCM Level of Service | D    |
| HCM Volume to Capacity ratio      | 0.91  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 89.8% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 3444: Q Street & 29th Street

4/4/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|-------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑↑    |      |      |      |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      |      |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 0.95  |      |      |      |      |      |      |      |      | 0.91 |      |
| Frt                    |      | 0.95  |      |      |      |      |      |      |      |      | 1.00 |      |
| Flt Protected          |      | 1.00  |      |      |      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (prot)      |      | 3348  |      |      |      |      |      |      |      |      | 5052 |      |
| Flt Permitted          |      | 1.00  |      |      |      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (perm)      |      | 3348  |      |      |      |      |      |      |      |      | 5052 |      |
| Volume (vph)           | 0    | 571   | 321  | 0    | 0    | 0    | 0    | 0    | 0    | 182  | 1202 | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 571   | 321  | 0    | 0    | 0    | 0    | 0    | 0    | 182  | 1202 | 0    |
| RTOR Reduction (vph)   | 0    | 15    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 22   | 0    |
| Lane Group Flow (vph)  | 0    | 877   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1362 | 0    |
| Turn Type              |      |       |      |      |      |      |      |      |      |      | Perm |      |
| Protected Phases       |      | 2     |      |      |      |      |      |      |      |      |      | 4    |
| Permitted Phases       |      |       |      |      |      |      |      |      |      |      | 4    |      |
| Actuated Green, G (s)  |      | 43.0  |      |      |      |      |      |      |      |      | 41.0 |      |
| Effective Green, g (s) |      | 42.0  |      |      |      |      |      |      |      |      | 40.0 |      |
| Actuated g/C Ratio     |      | 0.47  |      |      |      |      |      |      |      |      | 0.44 |      |
| Clearance Time (s)     |      | 3.0   |      |      |      |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 1562  |      |      |      |      |      |      |      |      | 2245 |      |
| v/s Ratio Prot         |      | c0.26 |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |       |      |      |      |      |      |      |      |      | 0.27 |      |
| v/c Ratio              |      | 0.56  |      |      |      |      |      |      |      |      | 0.61 |      |
| Uniform Delay, d1      |      | 17.3  |      |      |      |      |      |      |      |      | 19.0 |      |
| Progression Factor     |      | 1.00  |      |      |      |      |      |      |      |      | 0.30 |      |
| Incremental Delay, d2  |      | 1.5   |      |      |      |      |      |      |      |      | 1.0  |      |
| Delay (s)              |      | 18.8  |      |      |      |      |      |      |      |      | 6.8  |      |
| Level of Service       |      | B     |      |      |      |      |      |      |      |      | A    |      |
| Approach Delay (s)     |      | 18.8  |      |      | 0.0  |      |      | 0.0  |      |      | 6.8  |      |
| Approach LOS           |      | B     |      |      | A    |      |      | A    |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.5  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.58  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 59.6% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 3467: N Street & Alhambra

4/4/2005



| Movement                  | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|---------------------------|------|-------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations       |      | ↕     |      |      | ↕    |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)        | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |      | 4.0   |      |      | 4.0  |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor         |      | 1.00  |      |      | 1.00 |      |      | 1.00  |      |      | 1.00 |      |
| Fr <sub>t</sub>           |      | 0.94  |      |      | 0.99 |      |      | 0.99  |      |      | 0.98 |      |
| Fl <sub>t</sub> Protected |      | 0.99  |      |      | 0.99 |      |      | 1.00  |      |      | 1.00 |      |
| Satd. Flow (prot)         |      | 1568  |      |      | 1641 |      |      | 1654  |      |      | 1645 |      |
| Fl <sub>t</sub> Permitted |      | 0.86  |      |      | 0.84 |      |      | 0.98  |      |      | 0.99 |      |
| Satd. Flow (perm)         |      | 1362  |      |      | 1390 |      |      | 1617  |      |      | 1632 |      |
| Volume (vph)              | 138  | 253   | 269  | 54   | 215  | 26   | 20   | 507   | 51   | 9    | 489  | 76   |
| Peak-hour factor, PHF     | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 138  | 253   | 269  | 54   | 215  | 26   | 20   | 507   | 51   | 9    | 489  | 76   |
| RTOR Reduction (vph)      | 0    | 27    | 0    | 0    | 4    | 0    | 0    | 4     | 0    | 0    | 6    | 0    |
| Lane Group Flow (vph)     | 0    | 633   | 0    | 0    | 291  | 0    | 0    | 574   | 0    | 0    | 568  | 0    |
| Parking (#/hr)            | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type                 | Perm |       |      | Perm |      |      | Perm |       |      | Perm |      |      |
| Protected Phases          |      | 4     |      |      | 8    |      |      | 2     |      |      | 6    |      |
| Permitted Phases          | 4    |       |      | 8    |      |      | 2    |       |      | 6    |      |      |
| Actuated Green, G (s)     |      | 47.0  |      |      | 47.0 |      |      | 37.0  |      |      | 37.0 |      |
| Effective Green, g (s)    |      | 46.0  |      |      | 46.0 |      |      | 36.0  |      |      | 36.0 |      |
| Actuated g/C Ratio        |      | 0.51  |      |      | 0.51 |      |      | 0.40  |      |      | 0.40 |      |
| Clearance Time (s)        |      | 3.0   |      |      | 3.0  |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)        |      | 696   |      |      | 710  |      |      | 647   |      |      | 653  |      |
| v/s Ratio Prot            |      |       |      |      |      |      |      |       |      |      |      |      |
| v/s Ratio Perm            |      | c0.46 |      |      | 0.21 |      |      | c0.36 |      |      | 0.35 |      |
| v/c Ratio                 |      | 0.91  |      |      | 0.41 |      |      | 0.89  |      |      | 0.87 |      |
| Uniform Delay, d1         |      | 20.1  |      |      | 13.6 |      |      | 25.1  |      |      | 24.8 |      |
| Progression Factor        |      | 0.52  |      |      | 1.00 |      |      | 0.69  |      |      | 0.40 |      |
| Incremental Delay, d2     |      | 13.7  |      |      | 1.8  |      |      | 7.8   |      |      | 11.0 |      |
| Delay (s)                 |      | 24.2  |      |      | 15.4 |      |      | 25.2  |      |      | 20.9 |      |
| Level of Service          |      | C     |      |      | B    |      |      | C     |      |      | C    |      |
| Approach Delay (s)        |      | 24.2  |      |      | 15.4 |      |      | 25.2  |      |      | 20.9 |      |
| Approach LOS              |      | C     |      |      | B    |      |      | C     |      |      | C    |      |

**Intersection Summary**

|                                   |        |                      |     |
|-----------------------------------|--------|----------------------|-----|
| HCM Average Control Delay         | 22.3   | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 0.90   |                      |     |
| Actuated Cycle Length (s)         | 90.0   | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 100.2% | ICU Level of Service | G   |
| Analysis Period (min)             | 15     |                      |     |
| c Critical Lane Group             |        |                      |     |

HCM Signalized Intersection Capacity Analysis  
 5802: K Street & 29th Street

4/4/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑    | ↗    | ↖    | ↑     |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  | 4.0  | 4.0   |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00 | 1.00 | 1.00 | 1.00  |      |      |      |      |      | 0.91 |      |
| Frt                    |      | 1.00 | 0.85 | 1.00 | 1.00  |      |      |      |      |      | 0.98 |      |
| Flt Protected          |      | 1.00 | 1.00 | 0.95 | 1.00  |      |      |      |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 1863 | 1583 | 1770 | 1863  |      |      |      |      |      | 4957 |      |
| Flt Permitted          |      | 1.00 | 1.00 | 0.53 | 1.00  |      |      |      |      |      | 1.00 |      |
| Satd. Flow (perm)      |      | 1863 | 1583 | 994  | 1863  |      |      |      |      |      | 4957 |      |
| Volume (vph)           | 0    | 274  | 260  | 204  | 526   | 0    | 0    | 0    | 0    | 110  | 1100 | 202  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 274  | 260  | 204  | 526   | 0    | 0    | 0    | 0    | 110  | 1100 | 202  |
| RTOR Reduction (vph)   | 0    | 0    | 16   | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 25   | 0    |
| Lane Group Flow (vph)  | 0    | 274  | 244  | 204  | 526   | 0    | 0    | 0    | 0    | 0    | 1387 | 0    |
| Turn Type              |      |      | Perm | Perm |       |      |      |      |      |      | Perm |      |
| Protected Phases       |      | 4    |      |      | 8     |      |      |      |      |      |      | 6    |
| Permitted Phases       |      |      | 4    | 8    |       |      |      |      |      |      | 6    |      |
| Actuated Green, G (s)  |      | 45.0 | 45.0 | 45.0 | 45.0  |      |      |      |      |      | 39.0 |      |
| Effective Green, g (s) |      | 44.0 | 44.0 | 44.0 | 44.0  |      |      |      |      |      | 38.0 |      |
| Actuated g/C Ratio     |      | 0.49 | 0.49 | 0.49 | 0.49  |      |      |      |      |      | 0.42 |      |
| Clearance Time (s)     |      | 3.0  | 3.0  | 3.0  | 3.0   |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 911  | 774  | 486  | 911   |      |      |      |      |      | 2093 |      |
| v/s Ratio Prot         |      | 0.15 |      |      | c0.28 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      | 0.15 | 0.21 |       |      |      |      |      |      | 0.28 |      |
| v/c Ratio              |      | 0.30 | 0.31 | 0.42 | 0.58  |      |      |      |      |      | 0.66 |      |
| Uniform Delay, d1      |      | 13.8 | 13.9 | 14.8 | 16.4  |      |      |      |      |      | 20.9 |      |
| Progression Factor     |      | 0.57 | 0.52 | 0.38 | 0.39  |      |      |      |      |      | 0.99 |      |
| Incremental Delay, d2  |      | 0.8  | 1.0  | 2.2  | 2.2   |      |      |      |      |      | 1.2  |      |
| Delay (s)              |      | 8.7  | 8.2  | 7.8  | 8.6   |      |      |      |      |      | 21.9 |      |
| Level of Service       |      | A    | A    | A    | A     |      |      |      |      |      | C    |      |
| Approach Delay (s)     |      | 8.4  |      |      | 8.4   |      |      | 0.0  |      |      | 21.9 |      |
| Approach LOS           |      | A    |      |      | A     |      |      | A    |      |      | C    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 15.6  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.62  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 65.4% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 5848: J Street & 30th Street

4/4/2005



| Movement               | EBL2 | EBL  | EBT  | WBR2 | NBL  | NBT  | NBR  |
|------------------------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↖    | ↔↕↔  | ↗    | ↖    | ↕↔   |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  |      | 4.0  | 4.0  |      |
| Lane Util. Factor      |      | 0.86 | 0.86 |      | 0.91 | 0.91 |      |
| Frt                    |      | 1.00 | 1.00 |      | 1.00 | 0.95 |      |
| Flt Protected          |      | 0.95 | 1.00 |      | 0.95 | 0.99 |      |
| Satd. Flow (prot)      |      | 1522 | 4628 |      | 1610 | 3205 |      |
| Flt Permitted          |      | 0.95 | 1.00 |      | 0.95 | 0.99 |      |
| Satd. Flow (perm)      |      | 1522 | 4628 |      | 1610 | 3205 |      |
| Volume (vph)           | 238  | 248  | 1042 | 0    | 377  | 289  | 173  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 238  | 248  | 1042 | 0    | 377  | 289  | 173  |
| RTOR Reduction (vph)   | 0    | 59   | 0    | 0    | 0    | 40   | 0    |
| Lane Group Flow (vph)  | 0    | 340  | 1129 | 0    | 275  | 524  | 0    |
| Parking (#/hr)         |      |      | 0    | 0    |      |      | 0    |
| Turn Type              | Perm | Perm |      | Free | Perm |      |      |
| Protected Phases       |      |      | 2    |      |      | 8    |      |
| Permitted Phases       | 2    | 2    |      | Free | 8    |      |      |
| Actuated Green, G (s)  |      | 46.0 | 46.0 |      | 38.0 | 38.0 |      |
| Effective Green, g (s) |      | 45.0 | 45.0 |      | 37.0 | 37.0 |      |
| Actuated g/C Ratio     |      | 0.50 | 0.50 |      | 0.41 | 0.41 |      |
| Clearance Time (s)     |      | 3.0  | 3.0  |      | 3.0  | 3.0  |      |
| Lane Grp Cap (vph)     |      | 761  | 2314 |      | 662  | 1318 |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      | 0.22 | 0.24 |      | 0.17 | 0.16 |      |
| v/c Ratio              |      | 0.45 | 0.49 |      | 0.42 | 0.40 |      |
| Uniform Delay, d1      |      | 14.5 | 14.9 |      | 18.8 | 18.7 |      |
| Progression Factor     |      | 0.09 | 0.30 |      | 0.27 | 0.18 |      |
| Incremental Delay, d2  |      | 1.1  | 0.4  |      | 1.7  | 0.8  |      |
| Delay (s)              |      | 2.4  | 4.9  |      | 6.7  | 4.2  |      |
| Level of Service       |      | A    | A    |      | A    | A    |      |
| Approach Delay (s)     |      |      | 4.2  |      |      | 5.0  |      |
| Approach LOS           |      |      | A    |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 4.5   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.46  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 45.5% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
5849: L Street & 30th Street

4/4/2005



| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|---------------------------|------|------|------|------|-------|------|------|-------|------|------|------|------|
| Lane Configurations       |      |      |      |      | ↑↑↑   |      | ↖    | ↗↑↑   |      |      |      |      |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |      |      |      |      | 4.0   |      | 4.0  | 4.0   |      |      |      |      |
| Lane Util. Factor         |      |      |      |      | 0.91  |      | 0.86 | 0.86  |      |      |      |      |
| Fr <sub>t</sub>           |      |      |      |      | 0.97  |      | 1.00 | 1.00  |      |      |      |      |
| Fl <sub>t</sub> Protected |      |      |      |      | 1.00  |      | 0.95 | 1.00  |      |      |      |      |
| Satd. Flow (prot)         |      |      |      |      | 4922  |      | 1522 | 4646  |      |      |      |      |
| Fl <sub>t</sub> Permitted |      |      |      |      | 1.00  |      | 0.95 | 1.00  |      |      |      |      |
| Satd. Flow (perm)         |      |      |      |      | 4922  |      | 1522 | 4646  |      |      |      |      |
| Volume (vph)              | 0    | 0    | 0    | 0    | 466   | 127  | 184  | 1174  | 0    | 0    | 0    | 0    |
| Peak-hour factor, PHF     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 0    | 0    | 0    | 0    | 466   | 127  | 184  | 1174  | 0    | 0    | 0    | 0    |
| RTOR Reduction (vph)      | 0    | 0    | 0    | 0    | 33    | 0    | 88   | 0     | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)     | 0    | 0    | 0    | 0    | 560   | 0    | 96   | 1174  | 0    | 0    | 0    | 0    |
| Parking (#/hr)            |      |      |      |      |       | 0    |      | 0     |      |      |      |      |
| Turn Type                 |      |      |      |      |       |      | Perm |       |      |      |      |      |
| Protected Phases          |      |      |      |      | 6     |      |      | 8     |      |      |      |      |
| Permitted Phases          |      |      |      |      |       |      | 8    |       |      |      |      |      |
| Actuated Green, G (s)     |      |      |      |      | 36.0  |      | 48.0 | 48.0  |      |      |      |      |
| Effective Green, g (s)    |      |      |      |      | 35.0  |      | 47.0 | 47.0  |      |      |      |      |
| Actuated g/C Ratio        |      |      |      |      | 0.39  |      | 0.52 | 0.52  |      |      |      |      |
| Clearance Time (s)        |      |      |      |      | 3.0   |      | 3.0  | 3.0   |      |      |      |      |
| Lane Grp Cap (vph)        |      |      |      |      | 1914  |      | 795  | 2426  |      |      |      |      |
| v/s Ratio Prot            |      |      |      |      | c0.11 |      |      | c0.25 |      |      |      |      |
| v/s Ratio Perm            |      |      |      |      |       |      | 0.06 |       |      |      |      |      |
| v/c Ratio                 |      |      |      |      | 0.29  |      | 0.12 | 0.48  |      |      |      |      |
| Uniform Delay, d1         |      |      |      |      | 19.0  |      | 11.0 | 13.7  |      |      |      |      |
| Progression Factor        |      |      |      |      | 0.59  |      | 0.02 | 0.43  |      |      |      |      |
| Incremental Delay, d2     |      |      |      |      | 0.3   |      | 0.3  | 0.7   |      |      |      |      |
| Delay (s)                 |      |      |      |      | 11.5  |      | 0.6  | 6.6   |      |      |      |      |
| Level of Service          |      |      |      |      | B     |      | A    | A     |      |      |      |      |
| Approach Delay (s)        |      | 0.0  |      |      | 11.5  |      |      | 5.8   |      |      | 0.0  |      |
| Approach LOS              |      | A    |      |      | B     |      |      | A     |      |      | A    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 7.5   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.40  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 49.2% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 5880: N Street & 30th Street

4/4/2005



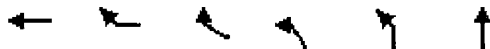
| Movement                          | EBL  | EBT   | WBT  | WBR  | NBL  | NBT  | NBR   | NEL2 | NEL   | NER  |
|-----------------------------------|------|-------|------|------|------|------|-------|------|-------|------|
| Lane Configurations               | ↖    | ↑     | ↗    |      |      | ↖↗   |       |      | ↖↗    |      |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 |
| Total Lost time (s)               | 4.0  | 4.0   | 4.0  |      |      | 4.0  |       |      | 4.0   |      |
| Lane Util. Factor                 | 1.00 | 1.00  | 1.00 |      |      | 0.91 |       |      | 0.97  |      |
| Fr <sub>t</sub>                   | 1.00 | 1.00  | 0.97 |      |      | 0.98 |       |      | 0.98  |      |
| Fl <sub>t</sub> Protected         | 0.95 | 1.00  | 1.00 |      |      | 0.99 |       |      | 0.96  |      |
| Satd. Flow (prot)                 | 1770 | 1863  | 1813 |      |      | 4967 |       |      | 3395  |      |
| Fl <sub>t</sub> Permitted         | 0.49 | 1.00  | 1.00 |      |      | 0.99 |       |      | 0.96  |      |
| Satd. Flow (perm)                 | 918  | 1863  | 1813 |      |      | 4967 |       |      | 3395  |      |
| Volume (vph)                      | 105  | 546   | 231  | 57   | 72   | 353  | 50    | 245  | 376   | 94   |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)                   | 105  | 546   | 231  | 57   | 72   | 353  | 50    | 245  | 376   | 94   |
| RTOR Reduction (vph)              | 0    | 0     | 10   | 0    | 0    | 16   | 0     | 0    | 0     | 0    |
| Lane Group Flow (vph)             | 105  | 546   | 278  | 0    | 0    | 459  | 0     | 0    | 715   | 0    |
| Turn Type                         | Perm |       |      | Perm |      |      | Split |      |       |      |
| Protected Phases                  |      | 4     | 8    |      |      | 2    |       | 6    | 6     |      |
| Permitted Phases                  | 4    |       |      |      | 2    |      |       |      |       |      |
| Actuated Green, G (s)             | 39.0 | 39.0  | 39.0 |      |      | 14.0 |       |      | 28.0  |      |
| Effective Green, g (s)            | 38.0 | 38.0  | 38.0 |      |      | 13.0 |       |      | 27.0  |      |
| Actuated g/C Ratio                | 0.42 | 0.42  | 0.42 |      |      | 0.14 |       |      | 0.30  |      |
| Clearance Time (s)                | 3.0  | 3.0   | 3.0  |      |      | 3.0  |       |      | 3.0   |      |
| Lane Grp Cap (vph)                | 388  | 787   | 765  |      |      | 717  |       |      | 1019  |      |
| v/s Ratio Prot                    |      | c0.29 | 0.15 |      |      |      |       |      | c0.21 |      |
| v/s Ratio Perm                    | 0.11 |       |      |      |      | 0.09 |       |      |       |      |
| v/c Ratio                         | 0.27 | 0.69  | 0.36 |      |      | 0.64 |       |      | 0.70  |      |
| Uniform Delay, d <sub>1</sub>     | 17.0 | 21.2  | 17.7 |      |      | 36.3 |       |      | 27.9  |      |
| Progression Factor                | 1.01 | 0.86  | 0.63 |      |      | 1.11 |       |      | 1.00  |      |
| Incremental Delay, d <sub>2</sub> | 0.6  | 1.7   | 1.1  |      |      | 4.2  |       |      | 4.0   |      |
| Delay (s)                         | 17.8 | 19.9  | 12.4 |      |      | 44.7 |       |      | 32.0  |      |
| Level of Service                  | B    | B     | B    |      |      | D    |       |      | C     |      |
| Approach Delay (s)                |      | 19.6  | 12.4 |      |      | 44.7 |       |      | 32.0  |      |
| Approach LOS                      |      | B     | B    |      |      | D    |       |      | C     |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 28.4  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.69  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 68.8% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
5882: P Street & 30th Street

4/4/2005



| Movement                          | WBT   | WBR   | WBR2 | NBL2 | NBL                  | NBT  |
|-----------------------------------|-------|-------|------|------|----------------------|------|
| Lane Configurations               | ↑↑↑   |       |      |      | ↑                    | ↑↑↑  |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900 | 1900 | 1900                 | 1900 |
| Total Lost time (s)               | 4.0   |       |      |      | 4.0                  | 4.0  |
| Lane Util. Factor                 | 0.91  |       |      |      | 1.00                 | 0.91 |
| Frt                               | 0.94  |       |      |      | 1.00                 | 1.00 |
| Flt Protected                     | 1.00  |       |      |      | 0.95                 | 1.00 |
| Satd. Flow (prot)                 | 4803  |       |      |      | 1593                 | 4916 |
| Flt Permitted                     | 1.00  |       |      |      | 0.95                 | 1.00 |
| Satd. Flow (perm)                 | 4803  |       |      |      | 1593                 | 4916 |
| Volume (vph)                      | 773   | 321   | 132  | 110  | 512                  | 370  |
| Peak-hour factor, PHF             | 1.00  | 1.00  | 1.00 | 1.00 | 1.00                 | 1.00 |
| Adj. Flow (vph)                   | 773   | 321   | 132  | 110  | 512                  | 370  |
| RTOR Reduction (vph)              | 17    | 0     | 0    | 0    | 8                    | 0    |
| Lane Group Flow (vph)             | 1209  | 0     | 0    | 0    | 614                  | 370  |
| Parking (#/hr)                    |       | 0     | 0    | 0    | 0                    | 0    |
| Turn Type                         |       |       |      | Perm | Perm                 |      |
| Protected Phases                  | 6     |       |      |      |                      | 8    |
| Permitted Phases                  |       |       |      | 8    | 8                    |      |
| Actuated Green, G (s)             | 33.0  |       |      |      | 51.0                 | 51.0 |
| Effective Green, g (s)            | 32.0  |       |      |      | 50.0                 | 50.0 |
| Actuated g/C Ratio                | 0.36  |       |      |      | 0.56                 | 0.56 |
| Clearance Time (s)                | 3.0   |       |      |      | 3.0                  | 3.0  |
| Lane Grp Cap (vph)                | 1708  |       |      |      | 885                  | 2731 |
| v/s Ratio Prot                    | c0.25 |       |      |      |                      | 0.08 |
| v/s Ratio Perm                    |       |       |      |      | c0.39                |      |
| v/c Ratio                         | 0.71  |       |      |      | 0.69                 | 0.14 |
| Uniform Delay, d1                 | 25.0  |       |      |      | 14.5                 | 9.6  |
| Progression Factor                | 0.26  |       |      |      | 1.00                 | 1.00 |
| Incremental Delay, d2             | 1.3   |       |      |      | 4.5                  | 0.1  |
| Delay (s)                         | 7.7   |       |      |      | 18.9                 | 9.7  |
| Level of Service                  | A     |       |      |      | B                    | A    |
| Approach Delay (s)                | 7.7   |       |      |      |                      | 15.5 |
| Approach LOS                      | A     |       |      |      |                      | B    |
| <b>Intersection Summary</b>       |       |       |      |      |                      |      |
| HCM Average Control Delay         |       | 11.2  |      |      | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      |       | 0.70  |      |      |                      |      |
| Actuated Cycle Length (s)         |       | 90.0  |      |      | Sum of lost time (s) | 8.0  |
| Intersection Capacity Utilization |       | 66.2% |      |      | ICU Level of Service | C    |
| Analysis Period (min)             |       | 15    |      |      |                      |      |
| c Critical Lane Group             |       |       |      |      |                      |      |



HCM Signalized Intersection Capacity Analysis  
 5886: Capitol & 30th Street

4/4/2005



| Movement                          | EBL   | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|-------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations               | ↵     | ↑↑   |      |      | ↑↑    |      |      | ↔↑↑  |      |      |      |      |
| Ideal Flow (vphpl)                | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               | 4.0   | 4.0  |      |      | 4.0   |      |      | 4.0  |      |      |      |      |
| Lane Util. Factor                 | 1.00  | 0.95 |      |      | 0.95  |      |      | 0.91 |      |      |      |      |
| Fr <sub>t</sub>                   | 1.00  | 1.00 |      |      | 0.98  |      |      | 0.98 |      |      |      |      |
| Fl <sub>t</sub> Protected         | 0.95  | 1.00 |      |      | 1.00  |      |      | 1.00 |      |      |      |      |
| Satd. Flow (prot)                 | 1770  | 3539 |      |      | 3481  |      |      | 4966 |      |      |      |      |
| Fl <sub>t</sub> Permitted         | 0.95  | 1.00 |      |      | 1.00  |      |      | 1.00 |      |      |      |      |
| Satd. Flow (perm)                 | 1770  | 3539 |      |      | 3481  |      |      | 4966 |      |      |      |      |
| Volume (vph)                      | 113   | 406  | 0    | 0    | 473   | 58   | 69   | 697  | 116  | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 113   | 406  | 0    | 0    | 473   | 58   | 69   | 697  | 116  | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0     | 0    | 0    | 0    | 10    | 0    | 0    | 23   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 113   | 406  | 0    | 0    | 521   | 0    | 0    | 859  | 0    | 0    | 0    | 0    |
| Turn Type                         | Prot  |      |      |      |       |      | Perm |      |      |      |      |      |
| Protected Phases                  | 7     | 4    |      |      | 8     |      |      | 2    |      |      |      |      |
| Permitted Phases                  |       |      |      |      |       |      | 2    |      |      |      |      |      |
| Actuated Green, G (s)             | 21.0  | 53.0 |      |      | 29.0  |      |      | 31.0 |      |      |      |      |
| Effective Green, g (s)            | 20.0  | 52.0 |      |      | 28.0  |      |      | 30.0 |      |      |      |      |
| Actuated g/C Ratio                | 0.22  | 0.58 |      |      | 0.31  |      |      | 0.33 |      |      |      |      |
| Clearance Time (s)                | 3.0   | 3.0  |      |      | 3.0   |      |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)                | 393   | 2045 |      |      | 1083  |      |      | 1655 |      |      |      |      |
| v/s Ratio Prot                    | c0.06 | 0.11 |      |      | c0.15 |      |      |      |      |      |      |      |
| v/s Ratio Perm                    |       |      |      |      |       |      |      | 0.17 |      |      |      |      |
| v/c Ratio                         | 0.29  | 0.20 |      |      | 0.48  |      |      | 0.52 |      |      |      |      |
| Uniform Delay, d <sub>1</sub>     | 29.1  | 9.1  |      |      | 25.1  |      |      | 24.2 |      |      |      |      |
| Progression Factor                | 1.18  | 1.25 |      |      | 0.34  |      |      | 0.69 |      |      |      |      |
| Incremental Delay, d <sub>2</sub> | 1.5   | 0.2  |      |      | 0.9   |      |      | 0.9  |      |      |      |      |
| Delay (s)                         | 36.0  | 11.5 |      |      | 9.4   |      |      | 17.6 |      |      |      |      |
| Level of Service                  | D     | B    |      |      | A     |      |      | B    |      |      |      |      |
| Approach Delay (s)                |       | 16.8 |      |      | 9.4   |      |      | 17.6 |      |      | 0.0  |      |
| Approach LOS                      |       | B    |      |      | A     |      |      | B    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 15.1  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.45  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 75.9% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 5888: Capitol & 29th Street

4/4/2005



| Movement                          | EBL  | EBT  | EBR   | WBL   | WBT  | WBR                  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|-------|-------|------|----------------------|------|------|------|------|------|------|
| Lane Configurations               |      | ↑↑   |       | ↖     | ↑↑   |                      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900  | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0  |       | 4.0   | 4.0  |                      |      |      |      |      | 4.0  |      |
| Lane Util. Factor                 |      | 0.95 |       | 1.00  | 0.95 |                      |      |      |      |      | 0.91 |      |
| Fr <sub>t</sub>                   |      | 0.93 |       | 1.00  | 1.00 |                      |      |      |      |      | 1.00 |      |
| Fl <sub>t</sub> Protected         |      | 1.00 |       | 0.95  | 1.00 |                      |      |      |      |      | 1.00 |      |
| Satd. Flow (prot)                 |      | 3124 |       | 1770  | 3539 |                      |      |      |      |      | 4879 |      |
| Fl <sub>t</sub> Permitted         |      | 1.00 |       | 0.30  | 1.00 |                      |      |      |      |      | 1.00 |      |
| Satd. Flow (perm)                 |      | 3124 |       | 561   | 3539 |                      |      |      |      |      | 4879 |      |
| Volume (vph)                      | 0    | 394  | 354   | 198   | 413  | 0                    | 0    | 0    | 0    | 123  | 1510 | 44   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 394  | 354   | 198   | 413  | 0                    | 0    | 0    | 0    | 123  | 1510 | 44   |
| RTOR Reduction (vph)              | 0    | 3    | 0     | 0     | 0    | 0                    | 0    | 0    | 0    | 0    | 3    | 0    |
| Lane Group Flow (vph)             | 0    | 745  | 0     | 198   | 413  | 0                    | 0    | 0    | 0    | 0    | 1674 | 0    |
| Parking (#/hr)                    |      | 0    | 0     |       |      |                      |      |      |      |      | 0    | 0    |
| Turn Type                         |      |      |       | Perm  |      |                      |      |      |      |      | Perm |      |
| Protected Phases                  |      | 4    |       |       | 8    |                      |      |      |      |      |      | 6    |
| Permitted Phases                  |      |      |       | 8     |      |                      |      |      |      |      | 6    |      |
| Actuated Green, G (s)             |      | 47.0 |       | 47.0  | 47.0 |                      |      |      |      |      | 37.0 |      |
| Effective Green, g (s)            |      | 46.0 |       | 46.0  | 46.0 |                      |      |      |      |      | 36.0 |      |
| Actuated g/C Ratio                |      | 0.51 |       | 0.51  | 0.51 |                      |      |      |      |      | 0.40 |      |
| Clearance Time (s)                |      | 3.0  |       | 3.0   | 3.0  |                      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |      | 1597 |       | 287   | 1809 |                      |      |      |      |      | 1952 |      |
| v/s Ratio Prot                    |      | 0.24 |       |       | 0.12 |                      |      |      |      |      |      |      |
| v/s Ratio Perm                    |      |      |       | c0.35 |      |                      |      |      |      |      | 0.34 |      |
| v/c Ratio                         |      | 0.47 |       | 0.69  | 0.23 |                      |      |      |      |      | 0.86 |      |
| Uniform Delay, d1                 |      | 14.1 |       | 16.6  | 12.2 |                      |      |      |      |      | 24.7 |      |
| Progression Factor                |      | 0.79 |       | 0.55  | 0.41 |                      |      |      |      |      | 0.36 |      |
| Incremental Delay, d2             |      | 0.6  |       | 11.8  | 0.3  |                      |      |      |      |      | 4.4  |      |
| Delay (s)                         |      | 11.8 |       | 20.9  | 5.2  |                      |      |      |      |      | 13.2 |      |
| Level of Service                  |      | B    |       | C     | A    |                      |      |      |      |      | B    |      |
| Approach Delay (s)                |      | 11.8 |       |       | 10.3 |                      |      | 0.0  |      |      | 13.2 |      |
| Approach LOS                      |      | B    |       |       | B    |                      |      | A    |      |      | B    |      |
| <b>Intersection Summary</b>       |      |      |       |       |      |                      |      |      |      |      |      |      |
| HCM Average Control Delay         |      |      | 12.3  |       |      | HCM Level of Service |      |      |      |      | B    |      |
| HCM Volume to Capacity ratio      |      |      | 0.76  |       |      |                      |      |      |      |      |      |      |
| Actuated Cycle Length (s)         |      |      | 90.0  |       |      | Sum of lost time (s) |      |      |      | 8.0  |      |      |
| Intersection Capacity Utilization |      |      | 75.9% |       |      | ICU Level of Service |      |      |      |      | D    |      |
| Analysis Period (min)             |      |      | 15    |       |      |                      |      |      |      |      |      |      |
| c Critical Lane Group             |      |      |       |       |      |                      |      |      |      |      |      |      |

# HCM Signalized Intersection Capacity Analysis

5890: Capitol & 26th St

4/4/2005



| Movement                          | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations               | ↖    | ↗    |      | ↖    | ↗    |      |      | ↕    |      |      | ↕    |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               | 4.0  | 4.0  |      | 4.0  | 4.0  |      |      | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor                 | 1.00 | 1.00 |      | 1.00 | 1.00 |      |      | 1.00 |      |      | 1.00 |      |
| Fr <sub>t</sub>                   | 1.00 | 1.00 |      | 1.00 | 0.99 |      |      | 0.97 |      |      | 0.98 |      |
| Flt Protected                     | 0.95 | 1.00 |      | 0.95 | 1.00 |      |      | 1.00 |      |      | 0.98 |      |
| Satd. Flow (prot)                 | 1770 | 1673 |      | 1770 | 1668 |      |      | 1631 |      |      | 1623 |      |
| Flt Permitted                     | 0.29 | 1.00 |      | 0.32 | 1.00 |      |      | 1.00 |      |      | 0.92 |      |
| Satd. Flow (perm)                 | 547  | 1673 |      | 590  | 1668 |      |      | 1631 |      |      | 1513 |      |
| Volume (vph)                      | 11   | 627  | 8    | 20   | 647  | 23   | 0    | 56   | 14   | 28   | 50   | 11   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 11   | 627  | 8    | 20   | 647  | 23   | 0    | 56   | 14   | 28   | 50   | 11   |
| RTOR Reduction (vph)              | 0    | 1    | 0    | 0    | 2    | 0    | 0    | 10   | 0    | 0    | 8    | 0    |
| Lane Group Flow (vph)             | 11   | 634  | 0    | 20   | 668  | 0    | 0    | 60   | 0    | 0    | 81   | 0    |
| Parking (#/hr)                    |      | 0    | 0    |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Turn Type                         | Perm |      |      | Perm |      |      | Perm |      |      | Perm |      |      |
| Protected Phases                  |      | 4    |      |      | 8    |      |      | 2    |      |      | 6    |      |
| Permitted Phases                  | 4    |      |      | 8    |      |      | 2    |      |      | 6    |      |      |
| Actuated Green, G (s)             | 37.0 | 37.0 |      | 37.0 | 37.0 |      |      | 17.0 |      |      | 17.0 |      |
| Effective Green, g (s)            | 36.0 | 36.0 |      | 36.0 | 36.0 |      |      | 16.0 |      |      | 16.0 |      |
| Actuated g/C Ratio                | 0.60 | 0.60 |      | 0.60 | 0.60 |      |      | 0.27 |      |      | 0.27 |      |
| Clearance Time (s)                | 3.0  | 3.0  |      | 3.0  | 3.0  |      |      | 3.0  |      |      | 3.0  |      |
| Lane Grp Cap (vph)                | 328  | 1004 |      | 354  | 1001 |      |      | 435  |      |      | 403  |      |
| v/s Ratio Prot                    |      | 0.38 |      |      | 0.40 |      |      | 0.04 |      |      |      |      |
| v/s Ratio Perm                    | 0.02 |      |      | 0.03 |      |      |      |      |      |      | 0.05 |      |
| v/c Ratio                         | 0.03 | 0.63 |      | 0.06 | 0.67 |      |      | 0.14 |      |      | 0.20 |      |
| Uniform Delay, d <sub>1</sub>     | 4.9  | 7.7  |      | 5.0  | 8.0  |      |      | 16.7 |      |      | 17.0 |      |
| Progression Factor                | 1.00 | 1.00 |      | 1.00 | 1.00 |      |      | 1.00 |      |      | 0.68 |      |
| Incremental Delay, d <sub>2</sub> | 0.2  | 3.0  |      | 0.3  | 3.5  |      |      | 0.7  |      |      | 1.1  |      |
| Delay (s)                         | 5.1  | 10.7 |      | 5.3  | 11.5 |      |      | 17.4 |      |      | 12.8 |      |
| Level of Service                  | A    | B    |      | A    | B    |      |      | B    |      |      | B    |      |
| Approach Delay (s)                |      | 10.7 |      |      | 11.3 |      |      | 17.4 |      |      | 12.8 |      |
| Approach LOS                      |      | B    |      |      | B    |      |      | B    |      |      | B    |      |

## Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.4  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.52  |                      |     |
| Actuated Cycle Length (s)         | 60.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 53.6% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6481: J Street & 28th Street

4/4/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↔↑↑↔ |      |      |      |      |      | ↑    |      |      | ↔    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      |      |      |      |      | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor      |      | 0.91 |      |      |      |      |      | 1.00 |      |      | 1.00 |      |
| Frt                    |      | 1.00 |      |      |      |      |      | 0.93 |      |      | 1.00 |      |
| Flt Protected          |      | 1.00 |      |      |      |      |      | 1.00 |      |      | 0.99 |      |
| Satd. Flow (prot)      |      | 4887 |      |      |      |      |      | 1554 |      |      | 1662 |      |
| Flt Permitted          |      | 1.00 |      |      |      |      |      | 1.00 |      |      | 0.94 |      |
| Satd. Flow (perm)      |      | 4887 |      |      |      |      |      | 1554 |      |      | 1579 |      |
| Volume (vph)           | 41   | 1897 | 65   | 0    | 0    | 0    | 0    | 165  | 195  | 10   | 48   | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 41   | 1897 | 65   | 0    | 0    | 0    | 0    | 165  | 195  | 10   | 48   | 0    |
| RTOR Reduction (vph)   | 0    | 4    | 0    | 0    | 0    | 0    | 0    | 4    | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 1999 | 0    | 0    | 0    | 0    | 0    | 356  | 0    | 0    | 58   | 0    |
| Parking (#/hr)         | 0    | 0    | 0    |      |      |      |      | 0    | 0    | 0    | 0    |      |
| Turn Type              | Perm |      |      |      |      |      | Perm |      |      |      |      |      |
| Protected Phases       |      | 4    |      |      |      |      |      | 2    |      |      | 6    |      |
| Permitted Phases       | 4    |      |      |      |      |      |      |      |      | 6    |      |      |
| Actuated Green, G (s)  |      | 48.0 |      |      |      |      |      | 36.0 |      |      | 36.0 |      |
| Effective Green, g (s) |      | 47.0 |      |      |      |      |      | 35.0 |      |      | 35.0 |      |
| Actuated g/C Ratio     |      | 0.52 |      |      |      |      |      | 0.39 |      |      | 0.39 |      |
| Clearance Time (s)     |      | 3.0  |      |      |      |      |      | 3.0  |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 2552 |      |      |      |      |      | 604  |      |      | 614  |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      | 0.23 |      |      |      |      |
| v/s Ratio Perm         |      | 0.41 |      |      |      |      |      |      |      |      | 0.04 |      |
| v/c Ratio              |      | 0.78 |      |      |      |      |      | 0.59 |      |      | 0.09 |      |
| Uniform Delay, d1      |      | 17.4 |      |      |      |      |      | 21.8 |      |      | 17.4 |      |
| Progression Factor     |      | 1.00 |      |      |      |      |      | 0.93 |      |      | 1.00 |      |
| Incremental Delay, d2  |      | 2.5  |      |      |      |      |      | 4.1  |      |      | 0.3  |      |
| Delay (s)              |      | 19.9 |      |      |      |      |      | 24.3 |      |      | 17.8 |      |
| Level of Service       |      | B    |      |      |      |      |      | C    |      |      | B    |      |
| Approach Delay (s)     |      | 19.9 |      |      |      | 0.0  |      | 24.3 |      |      | 17.8 |      |
| Approach LOS           |      | B    |      |      |      | A    |      | C    |      |      | B    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 20.5  | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 0.70  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 66.2% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6482: K Street & 28th Street

4/4/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↖    | ↗    |      | ↖    | ↗    |      | ↖    | ↗    |      | ↖    | ↗    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  |      | 4.0  | 4.0  |      | 4.0  | 4.0  |      | 4.0  | 4.0  |
| Lane Util. Factor      |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |
| Frt                    |      | 1.00 | 0.85 |      | 1.00 | 0.85 |      | 1.00 | 0.85 |      | 1.00 | 0.85 |
| Flt Protected          |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 0.99 | 1.00 |      | 0.99 | 1.00 |
| Satd. Flow (prot)      |      | 1674 | 1425 |      | 1672 | 1425 |      | 1656 | 1425 |      | 1654 | 1425 |
| Flt Permitted          |      | 0.98 | 1.00 |      | 0.96 | 1.00 |      | 0.89 | 1.00 |      | 0.87 | 1.00 |
| Satd. Flow (perm)      |      | 1650 | 1425 |      | 1612 | 1425 |      | 1485 | 1425 |      | 1452 | 1425 |
| Volume (vph)           | 12   | 440  | 28   | 34   | 570  | 115  | 61   | 183  | 67   | 50   | 130  | 32   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 12   | 440  | 28   | 34   | 570  | 115  | 61   | 183  | 67   | 50   | 130  | 32   |
| RTOR Reduction (vph)   | 0    | 0    | 8    | 0    | 0    | 26   | 0    | 0    | 45   | 0    | 0    | 22   |
| Lane Group Flow (vph)  | 0    | 452  | 20   | 0    | 604  | 89   | 0    | 244  | 22   | 0    | 180  | 10   |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      | Perm | Perm |      | Perm | Perm |      | Perm | Perm |      | Perm |
| Protected Phases       |      | 4    |      |      | 8    |      |      | 2    |      |      | 6    |      |
| Permitted Phases       | 4    |      | 4    | 8    |      | 8    | 2    |      | 2    | 6    |      | 6    |
| Actuated Green, G (s)  |      | 54.0 | 54.0 |      | 54.0 | 54.0 |      | 30.0 | 30.0 |      | 30.0 | 30.0 |
| Effective Green, g (s) |      | 53.0 | 53.0 |      | 53.0 | 53.0 |      | 29.0 | 29.0 |      | 29.0 | 29.0 |
| Actuated g/C Ratio     |      | 0.59 | 0.59 |      | 0.59 | 0.59 |      | 0.32 | 0.32 |      | 0.32 | 0.32 |
| Clearance Time (s)     |      | 3.0  | 3.0  |      | 3.0  | 3.0  |      | 3.0  | 3.0  |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |      | 972  | 839  |      | 949  | 839  |      | 479  | 459  |      | 468  | 459  |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      | 0.27 | 0.01 |      | 0.37 | 0.06 |      | 0.16 | 0.02 |      | 0.12 | 0.01 |
| v/c Ratio              |      | 0.47 | 0.02 |      | 0.64 | 0.11 |      | 0.51 | 0.05 |      | 0.38 | 0.02 |
| Uniform Delay, d1      |      | 10.5 | 7.7  |      | 12.2 | 8.1  |      | 24.7 | 21.0 |      | 23.6 | 20.8 |
| Progression Factor     |      | 1.00 | 1.00 |      | 0.51 | 0.45 |      | 1.05 | 2.23 |      | 1.07 | 1.11 |
| Incremental Delay, d2  |      | 1.6  | 0.1  |      | 2.6  | 0.2  |      | 3.4  | 0.2  |      | 2.3  | 0.1  |
| Delay (s)              |      | 12.1 | 7.8  |      | 8.9  | 3.9  |      | 29.3 | 46.9 |      | 27.6 | 23.2 |
| Level of Service       |      | B    | A    |      | A    | A    |      | C    | D    |      | C    | C    |
| Approach Delay (s)     |      | 11.8 |      |      | 8.1  |      |      | 33.1 |      |      | 26.9 |      |
| Approach LOS           |      | B    |      |      | A    |      |      | C    |      |      | C    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 16.0  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.59  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 90.4% | ICU Level of Service | E   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6483: L Street & 28th Street

4/4/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      |      | ↔    |      |      | ↑    |      |      | ↑    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      |      | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor      |      |      |      |      | 0.95 |      |      | 1.00 |      |      | 1.00 |      |
| Frt                    |      |      |      |      | 0.98 |      |      | 1.00 |      |      | 0.98 |      |
| Flt Protected          |      |      |      |      | 1.00 |      |      | 0.99 |      |      | 1.00 |      |
| Satd. Flow (prot)      |      |      |      |      | 3292 |      |      | 1656 |      |      | 1640 |      |
| Flt Permitted          |      |      |      |      | 1.00 |      |      | 0.87 |      |      | 1.00 |      |
| Satd. Flow (perm)      |      |      |      |      | 3292 |      |      | 1465 |      |      | 1640 |      |
| Volume (vph)           | 0    | 0    | 0    | 20   | 618  | 95   | 89   | 263  | 0    | 0    | 164  | 32   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 20   | 618  | 95   | 89   | 263  | 0    | 0    | 164  | 32   |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 13   | 0    | 0    | 0    | 0    | 0    | 8    | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 720  | 0    | 0    | 352  | 0    | 0    | 188  | 0    |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Turn Type              |      |      |      |      | Perm |      |      | Perm |      |      |      |      |
| Protected Phases       |      |      |      |      | 6    |      |      | 8    |      |      | 4    |      |
| Permitted Phases       |      |      |      |      | 6    |      |      | 8    |      |      |      |      |
| Actuated Green, G (s)  |      |      |      |      | 40.0 |      |      | 44.0 |      |      | 44.0 |      |
| Effective Green, g (s) |      |      |      |      | 39.0 |      |      | 43.0 |      |      | 43.0 |      |
| Actuated g/C Ratio     |      |      |      |      | 0.43 |      |      | 0.48 |      |      | 0.48 |      |
| Clearance Time (s)     |      |      |      |      | 3.0  |      |      | 3.0  |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      |      |      |      | 1427 |      |      | 700  |      |      | 784  |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      | 0.11 |      |
| v/s Ratio Perm         |      |      |      |      | 0.22 |      |      | 0.24 |      |      |      |      |
| v/c Ratio              |      |      |      |      | 0.50 |      |      | 0.50 |      |      | 0.24 |      |
| Uniform Delay, d1      |      |      |      |      | 18.5 |      |      | 16.2 |      |      | 13.9 |      |
| Progression Factor     |      |      |      |      | 0.48 |      |      | 0.82 |      |      | 0.40 |      |
| Incremental Delay, d2  |      |      |      |      | 1.3  |      |      | 2.0  |      |      | 0.7  |      |
| Delay (s)              |      |      |      |      | 10.2 |      |      | 15.3 |      |      | 6.3  |      |
| Level of Service       |      |      |      |      | B    |      |      | B    |      |      | A    |      |
| Approach Delay (s)     |      | 0.0  |      |      | 10.2 |      |      | 15.3 |      |      | 6.3  |      |
| Approach LOS           |      | A    |      |      | B    |      |      | B    |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.0  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.50  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 60.0% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6484: Capitol & 28th Street

4/4/2005



| Movement                  | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|---------------------------|------|-------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations       |      | ↕     |      | ↗    | ↖    |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)        | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |      | 4.0   |      | 4.0  | 4.0  |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor         |      | 1.00  |      | 1.00 | 1.00 |      |      | 1.00  |      |      | 1.00 |      |
| Fr <sub>t</sub>           |      | 0.99  |      | 1.00 | 0.98 |      |      | 0.98  |      |      | 0.99 |      |
| Fl <sub>t</sub> Protected |      | 1.00  |      | 0.95 | 1.00 |      |      | 0.98  |      |      | 0.99 |      |
| Satd. Flow (prot)         |      | 1653  |      | 1770 | 1645 |      |      | 1605  |      |      | 1645 |      |
| Fl <sub>t</sub> Permitted |      | 0.98  |      | 0.30 | 1.00 |      |      | 0.77  |      |      | 0.83 |      |
| Satd. Flow (perm)         |      | 1628  |      | 558  | 1645 |      |      | 1267  |      |      | 1379 |      |
| Volume (vph)              | 16   | 597   | 66   | 24   | 520  | 75   | 168  | 187   | 77   | 59   | 147  | 8    |
| Peak-hour factor, PHF     | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 16   | 597   | 66   | 24   | 520  | 75   | 168  | 187   | 77   | 59   | 147  | 8    |
| RTOR Reduction (vph)      | 0    | 4     | 0    | 0    | 6    | 0    | 0    | 9     | 0    | 0    | 2    | 0    |
| Lane Group Flow (vph)     | 0    | 675   | 0    | 24   | 589  | 0    | 0    | 423   | 0    | 0    | 212  | 0    |
| Parking (#/hr)            | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type                 | Perm |       |      | Perm |      |      | Perm |       |      | Perm |      |      |
| Protected Phases          |      | 4     |      |      | 8    |      |      | 2     |      |      | 6    |      |
| Permitted Phases          | 4    |       |      | 8    |      |      | 2    |       |      | 6    |      |      |
| Actuated Green, G (s)     |      | 45.0  |      | 45.0 | 45.0 |      |      | 39.0  |      |      | 39.0 |      |
| Effective Green, g (s)    |      | 44.0  |      | 44.0 | 44.0 |      |      | 38.0  |      |      | 38.0 |      |
| Actuated g/C Ratio        |      | 0.49  |      | 0.49 | 0.49 |      |      | 0.42  |      |      | 0.42 |      |
| Clearance Time (s)        |      | 3.0   |      | 3.0  | 3.0  |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)        |      | 796   |      | 273  | 804  |      |      | 535   |      |      | 582  |      |
| v/s Ratio Prot            |      |       |      |      | 0.36 |      |      |       |      |      |      |      |
| v/s Ratio Perm            |      | c0.41 |      | 0.04 |      |      |      | c0.33 |      |      | 0.15 |      |
| v/c Ratio                 |      | 0.85  |      | 0.09 | 0.73 |      |      | 0.79  |      |      | 0.36 |      |
| Uniform Delay, d1         |      | 20.1  |      | 12.3 | 18.3 |      |      | 22.6  |      |      | 17.8 |      |
| Progression Factor        |      | 1.00  |      | 0.48 | 0.40 |      |      | 0.57  |      |      | 0.44 |      |
| Incremental Delay, d2     |      | 10.9  |      | 0.6  | 5.8  |      |      | 10.6  |      |      | 1.7  |      |
| Delay (s)                 |      | 31.0  |      | 6.5  | 13.2 |      |      | 23.4  |      |      | 9.6  |      |
| Level of Service          |      | C     |      | A    | B    |      |      | C     |      |      | A    |      |
| Approach Delay (s)        |      | 31.0  |      |      | 12.9 |      |      | 23.4  |      |      | 9.6  |      |
| Approach LOS              |      | C     |      |      | B    |      |      | C     |      |      | A    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 21.2  | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 0.82  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 91.7% | ICU Level of Service | F   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
6485: N Street & 28th Street

4/4/2005



| Movement                  | EBL   | EBT  | EBR  | WBL  | WBT  | WBR  | NBL   | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------------|-------|------|------|------|------|------|-------|------|------|------|------|------|
| Lane Configurations       |       | ↔    |      |      | ↔    |      |       | ↑    |      |      | ↑    |      |
| Ideal Flow (vphpl)        | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |       | 4.0  |      |      | 4.0  |      |       | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor         |       | 0.95 |      |      | 1.00 |      |       | 1.00 |      |      | 1.00 |      |
| Fr <sub>t</sub>           |       | 1.00 |      |      | 0.89 |      |       | 0.96 |      |      | 1.00 |      |
| Fl <sub>t</sub> Protected |       | 0.99 |      |      | 0.99 |      |       | 1.00 |      |      | 0.98 |      |
| Satd. Flow (prot)         |       | 3331 |      |      | 1478 |      |       | 1611 |      |      | 1637 |      |
| Fl <sub>t</sub> Permitted |       | 0.88 |      |      | 0.77 |      |       | 1.00 |      |      | 0.78 |      |
| Satd. Flow (perm)         |       | 2933 |      |      | 1151 |      |       | 1611 |      |      | 1308 |      |
| Volume (vph)              | 94    | 772  | 24   | 54   | 0    | 241  | 0     | 139  | 57   | 100  | 110  | 0    |
| Peak-hour factor, PHF     | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 94    | 772  | 24   | 54   | 0    | 241  | 0     | 139  | 57   | 100  | 110  | 0    |
| RTOR Reduction (vph)      | 0     | 2    | 0    | 0    | 118  | 0    | 0     | 16   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)     | 0     | 888  | 0    | 0    | 177  | 0    | 0     | 180  | 0    | 0    | 210  | 0    |
| Parking (#/hr)            | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    | 0    |
| Turn Type                 | Perm  |      | Perm |      |      |      | Perm  |      |      |      |      |      |
| Protected Phases          | 2     |      | 6    |      |      |      | 8     |      |      |      |      |      |
| Permitted Phases          | 2     |      | 6    |      |      |      | 4     |      |      |      |      |      |
| Actuated Green, G (s)     | 47.0  |      | 47.0 |      |      |      | 37.0  |      |      |      |      |      |
| Effective Green, g (s)    | 46.0  |      | 46.0 |      |      |      | 36.0  |      |      |      |      |      |
| Actuated g/C Ratio        | 0.51  |      | 0.51 |      |      |      | 0.40  |      |      |      |      |      |
| Clearance Time (s)        | 3.0   |      | 3.0  |      |      |      | 3.0   |      |      |      |      |      |
| Lane Grp Cap (vph)        | 1499  |      | 588  |      |      |      | 644   |      |      |      |      |      |
| v/s Ratio Prot            |       |      |      |      |      |      | 0.11  |      |      |      |      |      |
| v/s Ratio Perm            | c0.30 |      | 0.15 |      |      |      | c0.16 |      |      |      |      |      |
| v/c Ratio                 | 0.59  |      | 0.30 |      |      |      | 0.28  |      |      |      |      |      |
| Uniform Delay, d1         | 15.4  |      | 12.7 |      |      |      | 18.2  |      |      |      |      |      |
| Progression Factor        | 1.00  |      | 5.73 |      |      |      | 1.00  |      |      |      |      |      |
| Incremental Delay, d2     | 1.7   |      | 0.7  |      |      |      | 1.1   |      |      |      |      |      |
| Delay (s)                 | 17.2  |      | 73.5 |      |      |      | 19.3  |      |      |      |      |      |
| Level of Service          | B     |      | E    |      |      |      | B     |      |      |      |      |      |
| Approach Delay (s)        | 17.2  |      | 73.5 |      |      |      | 19.3  |      |      |      |      |      |
| Approach LOS              | B     |      | E    |      |      |      | B     |      |      |      |      |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 29.4  | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 0.51  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 78.1% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
 6511: K Street & Alhambra

4/4/2005



| Movement                  | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|---------------------------|------|-------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations       |      | ↕     | ↗    |      | ↕    |      |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)        | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)       |      | 4.0   | 4.0  |      | 4.0  |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor         |      | 1.00  | 1.00 |      | 1.00 |      |      | 0.95 |      |      | 0.95  |      |
| Fr <sub>t</sub>           |      | 1.00  | 0.85 |      | 0.99 |      |      | 0.98 |      |      | 0.94  |      |
| Fl <sub>t</sub> Protected |      | 0.98  | 1.00 |      | 0.99 |      |      | 0.99 |      |      | 1.00  |      |
| Satd. Flow (prot)         |      | 1821  | 1583 |      | 1816 |      |      | 3421 |      |      | 3343  |      |
| Fl <sub>t</sub> Permitted |      | 0.82  | 1.00 |      | 0.90 |      |      | 0.58 |      |      | 0.95  |      |
| Satd. Flow (perm)         |      | 1521  | 1583 |      | 1663 |      |      | 1989 |      |      | 3175  |      |
| Volume (vph)              | 71   | 83    | 234  | 39   | 97   | 14   | 111  | 348  | 85   | 12   | 756   | 445  |
| Peak-hour factor, PHF     | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)           | 71   | 83    | 234  | 39   | 97   | 14   | 111  | 348  | 85   | 12   | 756   | 445  |
| RTOR Reduction (vph)      | 0    | 0     | 131  | 0    | 4    | 0    | 0    | 17   | 0    | 0    | 92    | 0    |
| Lane Group Flow (vph)     | 0    | 154   | 103  | 0    | 146  | 0    | 0    | 527  | 0    | 0    | 1121  | 0    |
| Turn Type                 | Perm |       | Perm | Perm |      |      | Perm |      |      | Perm |       |      |
| Protected Phases          |      | 4     |      |      | 8    |      |      | 2    |      |      |       | 6    |
| Permitted Phases          | 4    |       | 4    | 8    |      |      | 2    |      |      | 6    |       |      |
| Actuated Green, G (s)     |      | 31.0  | 31.0 |      | 31.0 |      |      | 53.0 |      |      | 53.0  |      |
| Effective Green, g (s)    |      | 30.0  | 30.0 |      | 30.0 |      |      | 52.0 |      |      | 52.0  |      |
| Actuated g/C Ratio        |      | 0.33  | 0.33 |      | 0.33 |      |      | 0.58 |      |      | 0.58  |      |
| Clearance Time (s)        |      | 3.0   | 3.0  |      | 3.0  |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)        |      | 507   | 528  |      | 554  |      |      | 1149 |      |      | 1834  |      |
| v/s Ratio Prot            |      |       |      |      |      |      |      |      |      |      |       |      |
| v/s Ratio Perm            |      | c0.10 | 0.06 |      | 0.09 |      |      | 0.26 |      |      | c0.35 |      |
| v/c Ratio                 |      | 0.30  | 0.19 |      | 0.26 |      |      | 0.46 |      |      | 0.61  |      |
| Uniform Delay, d1         |      | 22.3  | 21.4 |      | 21.9 |      |      | 10.9 |      |      | 12.4  |      |
| Progression Factor        |      | 0.93  | 1.14 |      | 1.00 |      |      | 0.62 |      |      | 0.50  |      |
| Incremental Delay, d2     |      | 1.5   | 0.8  |      | 1.2  |      |      | 0.3  |      |      | 0.8   |      |
| Delay (s)                 |      | 22.1  | 25.1 |      | 23.1 |      |      | 7.1  |      |      | 7.0   |      |
| Level of Service          |      | C     | C    |      | C    |      |      | A    |      |      | A     |      |
| Approach Delay (s)        |      | 23.9  |      |      | 23.1 |      |      | 7.1  |      |      | 7.0   |      |
| Approach LOS              |      | C     |      |      | C    |      |      | A    |      |      | A     |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.9  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.50  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 75.8% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 9622: K Street & 30th Street

4/4/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    | ↖    | ↑    |      |      | ↑     | ↗    |      | ↖↗   |      |      |      |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0  | 4.0  |      |      | 4.0   | 4.0  |      | 4.0  |      |      |      |      |
| Lane Util. Factor      | 1.00 | 1.00 |      |      | 1.00  | 1.00 |      | 0.91 |      |      |      |      |
| Frt                    | 1.00 | 1.00 |      |      | 1.00  | 0.85 |      | 0.98 |      |      |      |      |
| Flt Protected          | 0.95 | 1.00 |      |      | 1.00  | 1.00 |      | 0.99 |      |      |      |      |
| Satd. Flow (prot)      | 1770 | 1863 |      |      | 1863  | 1583 |      | 4947 |      |      |      |      |
| Flt Permitted          | 0.30 | 1.00 |      |      | 1.00  | 1.00 |      | 0.99 |      |      |      |      |
| Satd. Flow (perm)      | 561  | 1863 |      |      | 1863  | 1583 |      | 4947 |      |      |      |      |
| Volume (vph)           | 51   | 198  | 0    | 0    | 595   | 64   | 163  | 739  | 136  | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 51   | 198  | 0    | 0    | 595   | 64   | 163  | 739  | 136  | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 0     | 21   | 0    | 23   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 51   | 198  | 0    | 0    | 595   | 43   | 0    | 1015 | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      |      | Perm |       |      | Perm |      |      |      |      |      |
| Protected Phases       |      | 4    |      |      | 8     |      |      | 2    |      |      |      |      |
| Permitted Phases       | 4    |      |      |      |       | 8    | 2    |      |      |      |      |      |
| Actuated Green, G (s)  | 51.0 | 51.0 |      |      | 51.0  | 51.0 |      | 33.0 |      |      |      |      |
| Effective Green, g (s) | 50.0 | 50.0 |      |      | 50.0  | 50.0 |      | 32.0 |      |      |      |      |
| Actuated g/C Ratio     | 0.56 | 0.56 |      |      | 0.56  | 0.56 |      | 0.36 |      |      |      |      |
| Clearance Time (s)     | 3.0  | 3.0  |      |      | 3.0   | 3.0  |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)     | 312  | 1035 |      |      | 1035  | 879  |      | 1759 |      |      |      |      |
| v/s Ratio Prot         |      | 0.11 |      |      | c0.32 |      |      |      |      |      |      |      |
| v/s Ratio Perm         | 0.09 |      |      |      |       | 0.03 |      | 0.21 |      |      |      |      |
| v/c Ratio              | 0.16 | 0.19 |      |      | 0.57  | 0.05 |      | 0.58 |      |      |      |      |
| Uniform Delay, d1      | 9.8  | 9.9  |      |      | 13.1  | 9.1  |      | 23.5 |      |      |      |      |
| Progression Factor     | 0.63 | 0.65 |      |      | 1.00  | 1.01 |      | 0.68 |      |      |      |      |
| Incremental Delay, d2  | 1.0  | 0.4  |      |      | 2.0   | 0.1  |      | 1.2  |      |      |      |      |
| Delay (s)              | 7.2  | 6.8  |      |      | 15.0  | 9.3  |      | 17.2 |      |      |      |      |
| Level of Service       | A    | A    |      |      | B     | A    |      | B    |      |      |      |      |
| Approach Delay (s)     |      | 6.9  |      |      | 14.4  |      |      | 17.2 |      |      | 0.0  |      |
| Approach LOS           |      | A    |      |      | B     |      |      | B    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 15.0  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.58  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 65.4% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

CUMULATIVE PLUS SUTTER PROJECT  
WITH SMART PLAN

AM Peak Hour

Signalized Intersections

(am7)



HCM Signalized Intersection Capacity Analysis  
 2004: L Street & 21th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      |      | ↑↑   |      |      | ↑↑↑  |      |      |      |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      |      | 4.0  |      |      |      |      |
| Lane Util. Factor      |      |      |      |      | 0.95 |      |      | 0.91 |      |      |      |      |
| Frt                    |      |      |      |      | 0.97 |      |      | 1.00 |      |      |      |      |
| Flt Protected          |      |      |      |      | 1.00 |      |      | 0.99 |      |      |      |      |
| Satd. Flow (prot)      |      |      |      |      | 3248 |      |      | 4877 |      |      |      |      |
| Flt Permitted          |      |      |      |      | 1.00 |      |      | 0.99 |      |      |      |      |
| Satd. Flow (perm)      |      |      |      |      | 3248 |      |      | 4877 |      |      |      |      |
| Volume (vph)           | 0    | 0    | 0    | 0    | 721  | 212  | 265  | 1398 | 0    | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 0    | 721  | 212  | 265  | 1398 | 0    | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 8    | 0    | 0    | 55   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 925  | 0    | 0    | 1608 | 0    | 0    | 0    | 0    |
| Parking (#/hr)         | 0    | 0    |      |      | 0    | 0    | 0    | 0    | 0    |      |      |      |
| Turn Type              |      |      |      |      |      |      | Perm |      |      |      |      |      |
| Protected Phases       |      |      |      |      | 6    |      |      | 8    |      |      |      |      |
| Permitted Phases       |      |      |      |      |      |      | 8    |      |      |      |      |      |
| Actuated Green, G (s)  |      |      |      |      | 21.0 |      |      | 23.0 |      |      |      |      |
| Effective Green, g (s) |      |      |      |      | 20.0 |      |      | 22.0 |      |      |      |      |
| Actuated g/C Ratio     |      |      |      |      | 0.40 |      |      | 0.44 |      |      |      |      |
| Clearance Time (s)     |      |      |      |      | 3.0  |      |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)     |      |      |      |      | 1299 |      |      | 2146 |      |      |      |      |
| v/s Ratio Prot         |      |      |      |      | 0.28 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      |      |      |      |      |      | 0.33 |      |      |      |      |
| v/c Ratio              |      |      |      |      | 0.71 |      |      | 0.75 |      |      |      |      |
| Uniform Delay, d1      |      |      |      |      | 12.6 |      |      | 11.7 |      |      |      |      |
| Progression Factor     |      |      |      |      | 0.34 |      |      | 1.00 |      |      |      |      |
| Incremental Delay, d2  |      |      |      |      | 2.7  |      |      | 2.5  |      |      |      |      |
| Delay (s)              |      |      |      |      | 7.0  |      |      | 14.1 |      |      |      |      |
| Level of Service       |      |      |      |      | A    |      |      | B    |      |      |      |      |
| Approach Delay (s)     |      | 0.0  |      |      | 7.0  |      |      | 14.1 |      |      | 0.0  |      |
| Approach LOS           |      | A    |      |      | A    |      |      | B    |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.6  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.73  |                      |     |
| Actuated Cycle Length (s)         | 50.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 65.8% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 2012: J Street & 21th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑↑↑  |      |      |      |      |      | ↑↑↑  |      |      |      |      |
| Ideal Flow (vphp)      | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      |      |      |      |      | 4.0  |      |      |      |      |
| Lane Util. Factor      |      | 0.91 |      |      |      |      |      | 0.91 |      |      |      |      |
| Frt                    |      | 1.00 |      |      |      |      |      | 0.97 |      |      |      |      |
| Flt Protected          |      | 1.00 |      |      |      |      |      | 1.00 |      |      |      |      |
| Satd. Flow (prot)      |      | 4914 |      |      |      |      |      | 4788 |      |      |      |      |
| Flt Permitted          |      | 1.00 |      |      |      |      |      | 1.00 |      |      |      |      |
| Satd. Flow (perm)      |      | 4914 |      |      |      |      |      | 4788 |      |      |      |      |
| Volume (vph)           | 7    | 1072 | 0    | 0    | 0    | 0    | 0    | 1269 | 266  | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 7    | 1072 | 0    | 0    | 0    | 0    | 0    | 1269 | 266  | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0    | 1    | 0    | 0    | 0    | 0    | 0    | 8    | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 1078 | 0    | 0    | 0    | 0    | 0    | 1528 | 0    | 0    | 0    | 0    |
| Parking (#/hr)         | 0    | 0    |      |      |      |      |      | 0    | 0    |      |      |      |
| Turn Type              | Perm |      |      |      |      |      |      |      |      |      |      |      |
| Protected Phases       |      | 2    |      |      |      |      |      | 8    |      |      |      |      |
| Permitted Phases       | 2    |      |      |      |      |      |      |      |      |      |      |      |
| Actuated Green, G (s)  |      | 18.0 |      |      |      |      |      | 26.0 |      |      |      |      |
| Effective Green, g (s) |      | 17.0 |      |      |      |      |      | 25.0 |      |      |      |      |
| Actuated g/C Ratio     |      | 0.34 |      |      |      |      |      | 0.50 |      |      |      |      |
| Clearance Time (s)     |      | 3.0  |      |      |      |      |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)     |      | 1671 |      |      |      |      |      | 2394 |      |      |      |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      | 0.32 |      |      |      |      |
| v/s Ratio Perm         |      | 0.22 |      |      |      |      |      |      |      |      |      |      |
| v/c Ratio              |      | 0.64 |      |      |      |      |      | 0.64 |      |      |      |      |
| Uniform Delay, d1      |      | 13.9 |      |      |      |      |      | 9.2  |      |      |      |      |
| Progression Factor     |      | 0.51 |      |      |      |      |      | 0.23 |      |      |      |      |
| Incremental Delay, d2  |      | 1.6  |      |      |      |      |      | 0.8  |      |      |      |      |
| Delay (s)              |      | 8.7  |      |      |      |      |      | 2.9  |      |      |      |      |
| Level of Service       |      | A    |      |      |      |      |      | A    |      |      |      |      |
| Approach Delay (s)     |      | 8.7  |      |      | 0.0  |      |      | 2.9  |      |      | 0.0  |      |
| Approach LOS           |      | A    |      |      | A    |      |      | A    |      |      | A    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 5.3   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.64  |                      |     |
| Actuated Cycle Length (s)         | 50.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 58.0% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 2074: J Street & 19th Street

6/1/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR                  |     |
|-----------------------------------|------|------|-------|------|------|------|------|------|------|------|------|----------------------|-----|
| Lane Configurations               |      | ↑↑↑  |       |      |      |      |      |      |      |      | ↑↑↑  |                      |     |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900                 |     |
| Total Lost time (s)               |      | 4.0  |       |      |      |      |      |      |      |      | 4.0  |                      |     |
| Lane Util. Factor                 |      | 0.91 |       |      |      |      |      |      |      |      | 0.91 |                      |     |
| Frt                               |      | 0.97 |       |      |      |      |      |      |      |      | 1.00 |                      |     |
| Flt Protected                     |      | 1.00 |       |      |      |      |      |      |      |      | 0.99 |                      |     |
| Satd. Flow (prot)                 |      | 4753 |       |      |      |      |      |      |      |      | 4848 |                      |     |
| Flt Permitted                     |      | 1.00 |       |      |      |      |      |      |      |      | 0.99 |                      |     |
| Satd. Flow (perm)                 |      | 4753 |       |      |      |      |      |      |      |      | 4848 |                      |     |
| Volume (vph)                      | 0    | 1059 | 299   | 0    | 0    | 0    | 0    | 0    | 0    | 110  | 282  | 0                    |     |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00                 |     |
| Adj. Flow (vph)                   | 0    | 1059 | 299   | 0    | 0    | 0    | 0    | 0    | 0    | 110  | 282  | 0                    |     |
| RTOR Reduction (vph)              | 0    | 102  | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 31   | 0                    |     |
| Lane Group Flow (vph)             | 0    | 1256 | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 361  | 0                    |     |
| Parking (#/hr)                    |      | 0    | 0     |      |      |      |      |      |      | 0    | 0    |                      |     |
| Turn Type                         |      |      |       |      |      |      |      |      |      | Perm |      |                      |     |
| Protected Phases                  |      | 2    |       |      |      |      |      |      |      |      |      | 4                    |     |
| Permitted Phases                  |      |      |       |      |      |      |      |      |      | 4    |      |                      |     |
| Actuated Green, G (s)             |      | 24.0 |       |      |      |      |      |      |      |      |      | 20.0                 |     |
| Effective Green, g (s)            |      | 23.0 |       |      |      |      |      |      |      |      |      | 19.0                 |     |
| Actuated g/C Ratio                |      | 0.46 |       |      |      |      |      |      |      |      |      | 0.38                 |     |
| Clearance Time (s)                |      | 3.0  |       |      |      |      |      |      |      |      |      | 3.0                  |     |
| Lane Grp Cap (vph)                |      | 2186 |       |      |      |      |      |      |      |      |      | 1842                 |     |
| v/s Ratio Prot                    |      | 0.26 |       |      |      |      |      |      |      |      |      |                      |     |
| v/s Ratio Perm                    |      |      |       |      |      |      |      |      |      |      |      | 0.07                 |     |
| v/c Ratio                         |      | 0.57 |       |      |      |      |      |      |      |      |      | 0.20                 |     |
| Uniform Delay, d1                 |      | 9.9  |       |      |      |      |      |      |      |      |      | 10.4                 |     |
| Progression Factor                |      | 1.00 |       |      |      |      |      |      |      |      |      | 1.00                 |     |
| Incremental Delay, d2             |      | 1.1  |       |      |      |      |      |      |      |      |      | 0.2                  |     |
| Delay (s)                         |      | 11.0 |       |      |      |      |      |      |      |      |      | 10.6                 |     |
| Level of Service                  |      | B    |       |      |      |      |      |      |      |      |      | B                    |     |
| Approach Delay (s)                |      | 11.0 |       |      | 0.0  |      |      | 0.0  |      |      |      | 10.6                 |     |
| Approach LOS                      |      | B    |       |      | A    |      |      | A    |      |      |      | B                    |     |
| <b>Intersection Summary</b>       |      |      |       |      |      |      |      |      |      |      |      |                      |     |
| HCM Average Control Delay         |      |      | 10.9  |      |      |      |      |      |      |      |      | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      |      |      | 0.40  |      |      |      |      |      |      |      |      |                      |     |
| Actuated Cycle Length (s)         |      |      | 50.0  |      |      |      |      |      |      |      |      | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization |      |      | 41.5% |      |      |      |      |      |      |      |      | ICU Level of Service | A   |
| Analysis Period (min)             |      |      | 15    |      |      |      |      |      |      |      |      |                      |     |
| c Critical Lane Group             |      |      |       |      |      |      |      |      |      |      |      |                      |     |

HCM Signalized Intersection Capacity Analysis  
 2088: L Street & 29th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|-------|------|
| Lane Configurations    |      |      |      | ↙    | ↕     |      |      |      |      |      | ↕     | ↘    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      |      |      | 4.0  | 4.0   |      |      |      |      |      | 4.0   | 4.0  |
| Lane Util. Factor      |      |      |      | 1.00 | 0.95  |      |      |      |      |      | 0.86  | 0.86 |
| Frt                    |      |      |      | 1.00 | 1.00  |      |      |      |      |      | 1.00  | 0.85 |
| Flt Protected          |      |      |      | 0.95 | 1.00  |      |      |      |      |      | 1.00  | 1.00 |
| Satd. Flow (prot)      |      |      |      | 1770 | 3539  |      |      |      |      |      | 4646  | 1226 |
| Flt Permitted          |      |      |      | 0.95 | 1.00  |      |      |      |      |      | 1.00  | 1.00 |
| Satd. Flow (perm)      |      |      |      | 1770 | 3539  |      |      |      |      |      | 4646  | 1226 |
| Volume (vph)           | 0    | 0    | 0    | 156  | 583   | 0    | 0    | 0    | 0    | 0    | 1071  | 235  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 156  | 583   | 0    | 0    | 0    | 0    | 0    | 1071  | 235  |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 31   | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 98   |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 125  | 583   | 0    | 0    | 0    | 0    | 0    | 1071  | 137  |
| Parking (#/hr)         |      |      | 0    |      |       |      |      |      |      |      | 0     | 0    |
| Turn Type              |      |      |      | Perm |       |      |      |      |      |      |       | Perm |
| Protected Phases       |      |      |      |      | 6     |      |      |      |      |      |       | 4    |
| Permitted Phases       |      |      |      | 6    |       |      |      |      |      |      |       | 4    |
| Actuated Green, G (s)  |      |      |      | 40.0 | 40.0  |      |      |      |      |      | 44.0  | 44.0 |
| Effective Green, g (s) |      |      |      | 39.0 | 39.0  |      |      |      |      |      | 43.0  | 43.0 |
| Actuated g/C Ratio     |      |      |      | 0.43 | 0.43  |      |      |      |      |      | 0.48  | 0.48 |
| Clearance Time (s)     |      |      |      | 3.0  | 3.0   |      |      |      |      |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)     |      |      |      | 767  | 1534  |      |      |      |      |      | 2220  | 586  |
| v/s Ratio Prot         |      |      |      |      | c0.16 |      |      |      |      |      | c0.23 |      |
| v/s Ratio Perm         |      |      |      | 0.07 |       |      |      |      |      |      |       | 0.11 |
| v/c Ratio              |      |      |      | 0.16 | 0.38  |      |      |      |      |      | 0.48  | 0.23 |
| Uniform Delay, d1      |      |      |      | 15.6 | 17.3  |      |      |      |      |      | 15.9  | 13.8 |
| Progression Factor     |      |      |      | 0.63 | 0.71  |      |      |      |      |      | 0.79  | 0.05 |
| Incremental Delay, d2  |      |      |      | 0.4  | 0.7   |      |      |      |      |      | 0.6   | 0.7  |
| Delay (s)              |      |      |      | 10.3 | 13.0  |      |      |      |      |      | 13.2  | 1.5  |
| Level of Service       |      |      |      | B    | B     |      |      |      |      |      | B     | A    |
| Approach Delay (s)     |      | 0.0  |      |      | 12.4  |      |      | 0.0  |      |      | 11.1  |      |
| Approach LOS           |      | A    |      |      | B     |      |      | A    |      |      | B     |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.6  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.43  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 45.2% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
 2239: L Street & Alhambra

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      |      | ↕    |      |      | ↕    |      |      | ↕    | ↕    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      |      | 4.0  |      |      | 4.0  | 4.0  |
| Lane Util. Factor      |      |      |      |      | 1.00 |      |      | 1.00 |      |      | 1.00 | 1.00 |
| Frt                    |      |      |      |      | 0.99 |      |      | 0.96 |      |      | 1.00 | 0.85 |
| Flt Protected          |      |      |      |      | 1.00 |      |      | 0.99 |      |      | 0.99 | 1.00 |
| Satd. Flow (prot)      |      |      |      |      | 1647 |      |      | 1595 |      |      | 1851 | 1425 |
| Flt Permitted          |      |      |      |      | 1.00 |      |      | 0.78 |      |      | 0.84 | 1.00 |
| Satd. Flow (perm)      |      |      |      |      | 1647 |      |      | 1257 |      |      | 1559 | 1425 |
| Volume (vph)           | 0    | 0    | 0    | 13   | 130  | 16   | 155  | 418  | 237  | 71   | 483  | 357  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 13   | 130  | 16   | 155  | 418  | 237  | 71   | 483  | 357  |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 4    | 0    | 0    | 17   | 0    | 0    | 0    | 95   |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 155  | 0    | 0    | 793  | 0    | 0    | 554  | 262  |
| Parking (#/hr)         |      |      |      | 0    | 0    | 0    | 0    | 0    | 0    |      |      | 0    |
| Turn Type              |      |      |      | Perm |      |      | Perm |      |      | Perm |      | Perm |
| Protected Phases       |      |      |      |      | 6    |      |      | 8    |      |      | 4    |      |
| Permitted Phases       |      |      |      | 6    |      |      | 8    |      |      | 4    |      | 4    |
| Actuated Green, G (s)  |      |      |      |      | 17.0 |      |      | 67.0 |      |      | 67.0 | 67.0 |
| Effective Green, g (s) |      |      |      |      | 16.0 |      |      | 66.0 |      |      | 66.0 | 66.0 |
| Actuated g/C Ratio     |      |      |      |      | 0.18 |      |      | 0.73 |      |      | 0.73 | 0.73 |
| Clearance Time (s)     |      |      |      |      | 3.0  |      |      | 3.0  |      |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |      |      |      |      | 293  |      |      | 922  |      |      | 1143 | 1045 |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      |      |      | 0.09 |      |      | 0.63 |      |      | 0.36 | 0.18 |
| v/c Ratio              |      |      |      |      | 0.53 |      |      | 0.86 |      |      | 0.48 | 0.25 |
| Uniform Delay, d1      |      |      |      |      | 33.6 |      |      | 8.7  |      |      | 5.0  | 3.9  |
| Progression Factor     |      |      |      |      | 1.00 |      |      | 0.73 |      |      | 1.72 | 6.95 |
| Incremental Delay, d2  |      |      |      |      | 6.7  |      |      | 5.0  |      |      | 1.4  | 0.5  |
| Delay (s)              |      |      |      |      | 40.3 |      |      | 11.3 |      |      | 9.9  | 27.7 |
| Level of Service       |      |      |      |      | D    |      |      | B    |      |      | A    | C    |
| Approach Delay (s)     |      | 0.0  |      |      | 40.3 |      |      | 11.3 |      |      | 16.9 |      |
| Approach LOS           |      | A    |      |      | D    |      |      | B    |      |      | B    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 16.5  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.80  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 92.9% | ICU Level of Service | F   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3426: L Street & 19th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations    |      |      |      |      | ↑↑   |      |      |      |      |      | ↑↑↓   |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      |      |      |      |      | 4.0   |      |
| Lane Util. Factor      |      |      |      |      | 0.95 |      |      |      |      |      | 0.91  |      |
| Frt                    |      |      |      |      | 1.00 |      |      |      |      |      | 0.99  |      |
| Flt Protected          |      |      |      |      | 1.00 |      |      |      |      |      | 1.00  |      |
| Satd. Flow (prot)      |      |      |      |      | 3350 |      |      |      |      |      | 4866  |      |
| Flt Permitted          |      |      |      |      | 1.00 |      |      |      |      |      | 1.00  |      |
| Satd. Flow (perm)      |      |      |      |      | 3350 |      |      |      |      |      | 4866  |      |
| Volume (vph)           | 0    | 0    | 0    | 73   | 897  | 0    | 0    | 0    | 0    | 0    | 537   | 39   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 73   | 897  | 0    | 0    | 0    | 0    | 0    | 537   | 39   |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 12   | 0    | 0    | 0    | 0    | 0    | 17    | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 958  | 0    | 0    | 0    | 0    | 0    | 559   | 0    |
| Parking (#/hr)         |      | 0    | 0    | 0    | 0    |      |      |      |      | 0    | 0     | 0    |
| Turn Type              |      |      |      |      | Perm |      |      |      |      |      |       |      |
| Protected Phases       |      |      |      |      | 6    |      |      |      |      |      | 4     |      |
| Permitted Phases       |      |      |      | 6    |      |      |      |      |      |      |       |      |
| Actuated Green, G (s)  |      |      |      |      | 25.0 |      |      |      |      |      | 19.0  |      |
| Effective Green, g (s) |      |      |      |      | 24.0 |      |      |      |      |      | 18.0  |      |
| Actuated g/C Ratio     |      |      |      |      | 0.48 |      |      |      |      |      | 0.36  |      |
| Clearance Time (s)     |      |      |      |      | 3.0  |      |      |      |      |      | 3.0   |      |
| Lane Grp Cap (vph)     |      |      |      |      | 1608 |      |      |      |      |      | 1752  |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      | c0.11 |      |
| v/s Ratio Perm         |      |      |      |      | 0.29 |      |      |      |      |      |       |      |
| v/c Ratio              |      |      |      |      | 0.60 |      |      |      |      |      | 0.32  |      |
| Uniform Delay, d1      |      |      |      |      | 9.5  |      |      |      |      |      | 11.6  |      |
| Progression Factor     |      |      |      |      | 0.41 |      |      |      |      |      | 0.80  |      |
| Incremental Delay, d2  |      |      |      |      | 1.1  |      |      |      |      |      | 0.4   |      |
| Delay (s)              |      |      |      |      | 5.0  |      |      |      |      |      | 9.8   |      |
| Level of Service       |      |      |      |      | A    |      |      |      |      |      | A     |      |
| Approach Delay (s)     |      | 0.0  |      |      | 5.0  |      |      | 0.0  |      |      | 9.8   |      |
| Approach LOS           |      | A    |      |      | A    |      |      | A    |      |      | A     |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 6.8   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.48  |                      |     |
| Actuated Cycle Length (s)         | 50.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 44.8% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3427: L Street & 26th St

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations    |      |      |      |      | ↕↕   |      |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor      |      |      |      |      | 0.95 |      |      | 1.00 |      |      | 1.00  |      |
| Frt                    |      |      |      |      | 0.99 |      |      | 1.00 |      |      | 0.95  |      |
| Flt Protected          |      |      |      |      | 1.00 |      |      | 0.98 |      |      | 1.00  |      |
| Satd. Flow (prot)      |      |      |      |      | 3339 |      |      | 1646 |      |      | 1593  |      |
| Flt Permitted          |      |      |      |      | 1.00 |      |      | 0.92 |      |      | 1.00  |      |
| Satd. Flow (perm)      |      |      |      |      | 3339 |      |      | 1543 |      |      | 1593  |      |
| Volume (vph)           | 0    | 0    | 0    | 15   | 919  | 40   | 21   | 36   | 0    | 0    | 51    | 30   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 15   | 919  | 40   | 21   | 36   | 0    | 0    | 51    | 30   |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 6    | 0    | 0    | 0    | 0    | 0    | 19    | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 968  | 0    | 0    | 57   | 0    | 0    | 62    | 0    |
| Parking (#/hr)         |      |      |      | 0    | 0    | 0    | 0    | 0    |      |      | 0     | 0    |
| Turn Type              |      |      |      | Perm |      |      | Perm |      |      |      |       |      |
| Protected Phases       |      |      |      |      | 8    |      |      | 2    |      |      | 6     |      |
| Permitted Phases       |      |      |      | 8    |      |      | 2    |      |      |      |       |      |
| Actuated Green, G (s)  |      |      |      |      | 25.0 |      |      | 19.0 |      |      | 19.0  |      |
| Effective Green, g (s) |      |      |      |      | 24.0 |      |      | 18.0 |      |      | 18.0  |      |
| Actuated g/C Ratio     |      |      |      |      | 0.48 |      |      | 0.36 |      |      | 0.36  |      |
| Clearance Time (s)     |      |      |      |      | 3.0  |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)     |      |      |      |      | 1603 |      |      | 555  |      |      | 573   |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      | c0.04 |      |
| v/s Ratio Perm         |      |      |      |      | 0.29 |      |      | 0.04 |      |      |       |      |
| v/c Ratio              |      |      |      |      | 0.60 |      |      | 0.10 |      |      | 0.11  |      |
| Uniform Delay, d1      |      |      |      |      | 9.5  |      |      | 10.6 |      |      | 10.7  |      |
| Progression Factor     |      |      |      |      | 1.00 |      |      | 0.68 |      |      | 1.00  |      |
| Incremental Delay, d2  |      |      |      |      | 1.7  |      |      | 0.4  |      |      | 0.4   |      |
| Delay (s)              |      |      |      |      | 11.2 |      |      | 7.6  |      |      | 11.0  |      |
| Level of Service       |      |      |      |      | B    |      |      | A    |      |      | B     |      |
| Approach Delay (s)     |      | 0.0  |      |      | 11.2 |      |      | 7.6  |      |      | 11.0  |      |
| Approach LOS           |      | A    |      |      | B    |      |      | A    |      |      | B     |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.0  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.39  |                      |     |
| Actuated Cycle Length (s)         | 50.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 43.5% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3428: J Street & 29th St off ramp

6/1/2005



| Movement                          | EBT   | EBR   | SBL   | SBT                  | SWL2 | SWL  |
|-----------------------------------|-------|-------|-------|----------------------|------|------|
| Lane Configurations               | ↑↑↑   |       |       | ↑↑↑                  |      | ↑↑   |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900  | 1900                 | 1900 | 1900 |
| Total Lost time (s)               | 4.0   |       |       | 4.0                  |      | 4.0  |
| Lane Util. Factor                 | 0.91  |       |       | 0.91                 |      | 0.97 |
| Frt                               | 0.96  |       |       | 1.00                 |      | 1.00 |
| Flt Protected                     | 1.00  |       |       | 1.00                 |      | 0.95 |
| Satd. Flow (prot)                 | 4708  |       |       | 4891                 |      | 3433 |
| Flt Permitted                     | 1.00  |       |       | 1.00                 |      | 0.95 |
| Satd. Flow (perm)                 | 4708  |       |       | 4891                 |      | 3433 |
| Volume (vph)                      | 914   | 359   | 34    | 308                  | 423  | 657  |
| Peak-hour factor, PHF             | 1.00  | 1.00  | 1.00  | 1.00                 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 914   | 359   | 34    | 308                  | 423  | 657  |
| RTOR Reduction (vph)              | 67    | 0     | 0     | 0                    | 0    | 126  |
| Lane Group Flow (vph)             | 1206  | 0     | 0     | 342                  | 0    | 954  |
| Parking (#/hr)                    | 0     | 0     |       | 0                    |      |      |
| Turn Type                         |       |       | Split |                      | Perm |      |
| Protected Phases                  | 2     |       | 8     | 8                    |      | 4    |
| Permitted Phases                  |       |       |       |                      | 4    |      |
| Actuated Green, G (s)             | 31.0  |       |       | 17.0                 |      | 33.0 |
| Effective Green, g (s)            | 30.0  |       |       | 16.0                 |      | 32.0 |
| Actuated g/C Ratio                | 0.33  |       |       | 0.18                 |      | 0.36 |
| Clearance Time (s)                | 3.0   |       |       | 3.0                  |      | 3.0  |
| Lane Grp Cap (vph)                | 1569  |       |       | 870                  |      | 1221 |
| v/s Ratio Prot                    | c0.26 |       |       | c0.07                |      |      |
| v/s Ratio Perm                    |       |       |       |                      |      | 0.28 |
| v/c Ratio                         | 0.77  |       |       | 0.39                 |      | 0.78 |
| Uniform Delay, d1                 | 26.9  |       |       | 32.7                 |      | 25.9 |
| Progression Factor                | 0.55  |       |       | 1.00                 |      | 1.00 |
| Incremental Delay, d2             | 3.3   |       |       | 1.3                  |      | 5.0  |
| Delay (s)                         | 18.1  |       |       | 34.0                 |      | 30.9 |
| Level of Service                  | B     |       |       | C                    |      | C    |
| Approach Delay (s)                | 18.1  |       |       | 34.0                 |      | 30.9 |
| Approach LOS                      | B     |       |       | C                    |      | C    |
| <b>Intersection Summary</b>       |       |       |       |                      |      |      |
| HCM Average Control Delay         |       | 25.2  |       | HCM Level of Service |      | C    |
| HCM Volume to Capacity ratio      |       | 0.70  |       |                      |      |      |
| Actuated Cycle Length (s)         |       | 90.0  |       | Sum of lost time (s) |      | 12.0 |
| Intersection Capacity Utilization |       | 73.1% |       | ICU Level of Service |      | D    |
| Analysis Period (min)             |       | 15    |       |                      |      |      |
| c Critical Lane Group             |       |       |       |                      |      |      |

# HCM Signalized Intersection Capacity Analysis

3429: J Street & Alhambra

6/1/2005



| Movement                          | EBL   | EBT   | EBR  | WBL   | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|-----------------------------------|-------|-------|------|-------|------|------|------|------|------|------|-------|------|
| Lane Configurations               | ↙     | ↕     |      | ↙     | ↕    | ↗    |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)               | 4.0   | 4.0   |      | 4.0   | 4.0  | 4.0  |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor                 | 1.00  | 0.95  |      | 0.95  | 0.95 | 1.00 |      | 0.95 |      |      | 0.95  |      |
| Fr <sub>t</sub>                   | 1.00  | 0.97  |      | 1.00  | 1.00 | 0.85 |      | 0.95 |      |      | 1.00  |      |
| Fl <sub>t</sub> Protected         | 0.95  | 1.00  |      | 0.95  | 0.95 | 1.00 |      | 1.00 |      |      | 1.00  |      |
| Satd. Flow (prot)                 | 1770  | 3262  |      | 1681  | 1681 | 1425 |      | 3199 |      |      | 3357  |      |
| Fl <sub>t</sub> Permitted         | 0.95  | 1.00  |      | 0.95  | 0.95 | 1.00 |      | 1.00 |      |      | 0.94  |      |
| Satd. Flow (perm)                 | 1770  | 3262  |      | 1681  | 1681 | 1425 |      | 3199 |      |      | 3163  |      |
| Volume (vph)                      | 153   | 924   | 228  | 595   | 0    | 197  | 0    | 248  | 119  | 10   | 322   | 0    |
| Peak-hour factor, PHF             | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)                   | 153   | 924   | 228  | 595   | 0    | 197  | 0    | 248  | 119  | 10   | 322   | 0    |
| RTOR Reduction (vph)              | 0     | 24    | 0    | 0     | 0    | 147  | 0    | 64   | 0    | 0    | 0     | 0    |
| Lane Group Flow (vph)             | 153   | 1128  | 0    | 298   | 297  | 50   | 0    | 303  | 0    | 0    | 332   | 0    |
| Parking (#/hr)                    |       | 0     | 0    |       |      | 0    |      | 0    | 0    |      | 0     |      |
| Turn Type                         | Split |       |      | Split |      | Perm |      |      |      | Perm |       |      |
| Protected Phases                  | 2     | 2     |      | 6     | 6    |      |      | 8    |      |      | 4     |      |
| Permitted Phases                  |       |       |      |       |      | 6    |      |      |      | 4    |       |      |
| Actuated Green, G (s)             | 40.0  | 40.0  |      | 24.0  | 24.0 | 24.0 |      | 17.0 |      |      | 17.0  |      |
| Effective Green, g (s)            | 39.0  | 39.0  |      | 23.0  | 23.0 | 23.0 |      | 16.0 |      |      | 16.0  |      |
| Actuated g/C Ratio                | 0.43  | 0.43  |      | 0.26  | 0.26 | 0.26 |      | 0.18 |      |      | 0.18  |      |
| Clearance Time (s)                | 3.0   | 3.0   |      | 3.0   | 3.0  | 3.0  |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)                | 767   | 1414  |      | 430   | 430  | 364  |      | 569  |      |      | 562   |      |
| v/s Ratio Prot                    | 0.09  | c0.35 |      | c0.18 | 0.18 |      |      | 0.09 |      |      |       |      |
| v/s Ratio Perm                    |       |       |      |       |      | 0.04 |      |      |      |      | c0.10 |      |
| v/c Ratio                         | 0.20  | 0.80  |      | 0.69  | 0.69 | 0.14 |      | 0.53 |      |      | 0.59  |      |
| Uniform Delay, d <sub>1</sub>     | 15.8  | 22.1  |      | 30.3  | 30.3 | 25.9 |      | 33.6 |      |      | 34.0  |      |
| Progression Factor                | 0.60  | 0.56  |      | 1.00  | 1.00 | 1.00 |      | 0.50 |      |      | 1.00  |      |
| Incremental Delay, d <sub>2</sub> | 0.6   | 4.7   |      | 8.9   | 8.8  | 0.8  |      | 3.3  |      |      | 4.5   |      |
| Delay (s)                         | 10.1  | 17.0  |      | 39.2  | 39.1 | 26.6 |      | 20.1 |      |      | 38.5  |      |
| Level of Service                  | B     | B     |      | D     | D    | C    |      | C    |      |      | D     |      |
| Approach Delay (s)                |       | 16.1  |      |       | 36.0 |      |      | 20.1 |      |      | 38.5  |      |
| Approach LOS                      |       | B     |      |       | D    |      |      | C    |      |      | D     |      |

## Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 25.0  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.72  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 75.4% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3435: N Street & 29th Street

6/1/2005



| Movement               | EBT  | EBR   | EBR2 | WBL2  | WBL   | WBT   | SBL2 | SBL   | SBT  | SBR  |
|------------------------|------|-------|------|-------|-------|-------|------|-------|------|------|
| Lane Configurations    | ↑    | ↔     |      |       | ↔     | ↔     |      | ↔     | ↑↓   |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900  | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    | 4.0  | 4.0   |      |       | 4.0   | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor      | 1.00 | 1.00  |      |       | 0.95  | 0.95  |      | 0.97  | 0.95 |      |
| Frnt                   | 1.00 | 0.85  |      |       | 1.00  | 1.00  |      | 1.00  | 1.00 |      |
| Flt Protected          | 1.00 | 1.00  |      |       | 0.95  | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)      | 1676 | 1425  |      |       | 1681  | 1770  |      | 3433  | 3356 |      |
| Flt Permitted          | 1.00 | 1.00  |      |       | 0.95  | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)      | 1676 | 1425  |      |       | 1681  | 1770  |      | 3433  | 3356 |      |
| Volume (vph)           | 248  | 212   | 39   | 151   | 110   | 438   | 100  | 762   | 326  | 4    |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 248  | 212   | 39   | 151   | 110   | 438   | 100  | 762   | 326  | 4    |
| RTOR Reduction (vph)   | 0    | 8     | 0    | 0     | 0     | 0     | 0    | 0     | 1    | 0    |
| Lane Group Flow (vph)  | 248  | 243   | 0    | 0     | 261   | 438   | 0    | 862   | 329  | 0    |
| Parking (#/hr)         | 0    | 0     | 0    |       |       |       |      |       | 0    |      |
| Turn Type              |      | Perm  |      | Split | Split |       | Perm | Perm  |      |      |
| Protected Phases       | 4    |       |      | 8     | 8     | 8     |      |       | 6    |      |
| Permitted Phases       |      | 4     |      |       |       |       | 6    | 6     |      |      |
| Actuated Green, G (s)  | 22.0 | 22.0  |      |       | 29.0  | 29.0  |      | 30.0  | 30.0 |      |
| Effective Green, g (s) | 21.0 | 21.0  |      |       | 28.0  | 28.0  |      | 29.0  | 29.0 |      |
| Actuated g/C Ratio     | 0.23 | 0.23  |      |       | 0.31  | 0.31  |      | 0.32  | 0.32 |      |
| Clearance Time (s)     | 3.0  | 3.0   |      |       | 3.0   | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     | 391  | 333   |      |       | 523   | 551   |      | 1106  | 1081 |      |
| v/s Ratio Prot         | 0.15 |       |      |       | 0.16  | c0.25 |      |       | 0.10 |      |
| v/s Ratio Perm         |      | c0.17 |      |       |       |       |      | c0.25 |      |      |
| v/c Ratio              | 0.63 | 0.73  |      |       | 0.50  | 0.79  |      | 0.78  | 0.30 |      |
| Uniform Delay, d1      | 31.0 | 31.9  |      |       | 25.3  | 28.4  |      | 27.6  | 22.9 |      |
| Progression Factor     | 0.75 | 0.74  |      |       | 0.72  | 0.71  |      | 0.72  | 0.68 |      |
| Incremental Delay, d2  | 7.5  | 13.0  |      |       | 1.9   | 6.9   |      | 4.9   | 0.6  |      |
| Delay (s)              | 30.9 | 36.6  |      |       | 20.1  | 27.2  |      | 24.6  | 16.1 |      |
| Level of Service       | C    | D     |      |       | C     | C     |      | C     | B    |      |
| Approach Delay (s)     | 33.7 |       |      |       |       | 24.6  |      |       | 22.3 |      |
| Approach LOS           | C    |       |      |       |       | C     |      |       | C    |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 25.3  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.77  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 73.2% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3436: Capitol & Alhambra

6/1/2005



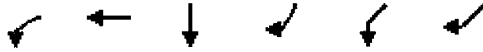
| Movement               | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|-------|-------|------|-------|-------|------|------|-------|------|------|------|------|
| Lane Configurations    |       | ↔     |      |       | ↔     |      | ↗    | ↖     | ↗    | ↖    | ↖    | ↗    |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |       | 4.0   |      |       | 4.0   |      | 4.0  | 4.0   | 4.0  | 4.0  | 4.0  | 4.0  |
| Lane Util. Factor      |       | 0.95  |      |       | 0.95  |      | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt                    |       | 0.98  |      |       | 0.97  |      | 1.00 | 1.00  | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected          |       | 0.99  |      |       | 1.00  |      | 0.95 | 1.00  | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot)      |       | 3273  |      |       | 3251  |      | 1593 | 1676  | 1425 | 1593 | 1676 | 1425 |
| Flt Permitted          |       | 0.99  |      |       | 1.00  |      | 0.36 | 1.00  | 1.00 | 0.17 | 1.00 | 1.00 |
| Satd. Flow (perm)      |       | 3273  |      |       | 3251  |      | 602  | 1676  | 1425 | 280  | 1676 | 1425 |
| Volume (vph)           | 75    | 300   | 51   | 29    | 713   | 197  | 51   | 577   | 103  | 88   | 392  | 51   |
| Peak-hour factor, PHF  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 75    | 300   | 51   | 29    | 713   | 197  | 51   | 577   | 103  | 88   | 392  | 51   |
| RTOR Reduction (vph)   | 0     | 12    | 0    | 0     | 27    | 0    | 0    | 0     | 35   | 0    | 0    | 26   |
| Lane Group Flow (vph)  | 0     | 414   | 0    | 0     | 912   | 0    | 51   | 577   | 68   | 88   | 392  | 25   |
| Parking (#/hr)         | 0     | 0     | 0    | 0     | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type              | Split |       |      | Split |       |      | Perm |       | Perm | Perm |      | Perm |
| Protected Phases       | 4     | 4     |      | 8     | 8     |      |      | 2     |      |      |      | 6    |
| Permitted Phases       |       |       |      |       |       |      | 2    |       | 2    | 6    |      | 6    |
| Actuated Green, G (s)  |       | 17.0  |      |       | 28.0  |      | 36.0 | 36.0  | 36.0 | 36.0 | 36.0 | 36.0 |
| Effective Green, g (s) |       | 16.0  |      |       | 27.0  |      | 35.0 | 35.0  | 35.0 | 35.0 | 35.0 | 35.0 |
| Actuated g/C Ratio     |       | 0.18  |      |       | 0.30  |      | 0.39 | 0.39  | 0.39 | 0.39 | 0.39 | 0.39 |
| Clearance Time (s)     |       | 3.0   |      |       | 3.0   |      | 3.0  | 3.0   | 3.0  | 3.0  | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |       | 582   |      |       | 975   |      | 234  | 652   | 554  | 109  | 652  | 554  |
| v/s Ratio Prot         |       | c0.13 |      |       | c0.28 |      |      | c0.34 |      |      | 0.23 |      |
| v/s Ratio Perm         |       |       |      |       |       |      | 0.08 |       | 0.05 | 0.31 |      | 0.02 |
| v/c Ratio              |       | 0.71  |      |       | 0.94  |      | 0.22 | 0.88  | 0.12 | 0.81 | 0.60 | 0.04 |
| Uniform Delay, d1      |       | 34.8  |      |       | 30.7  |      | 18.4 | 25.6  | 17.6 | 24.5 | 21.9 | 17.1 |
| Progression Factor     |       | 0.80  |      |       | 1.00  |      | 0.88 | 0.77  | 0.84 | 0.76 | 0.72 | 0.37 |
| Incremental Delay, d2  |       | 6.9   |      |       | 17.0  |      | 0.8  | 7.2   | 0.2  | 42.2 | 3.7  | 0.1  |
| Delay (s)              |       | 34.7  |      |       | 47.6  |      | 17.1 | 27.0  | 15.0 | 60.8 | 19.5 | 6.5  |
| Level of Service       |       | C     |      |       | D     |      | B    | C     | B    | E    | B    | A    |
| Approach Delay (s)     |       | 34.7  |      |       | 47.6  |      |      | 24.6  |      |      | 25.1 |      |
| Approach LOS           |       | C     |      |       | D     |      |      | C     |      |      | C    |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 34.6  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.87  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 87.5% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3437: P Street & 29th St off ramp

6/1/2005



| Movement               | WBL  | WBT   | SBT   | SBR  | SWL   | SWR  |
|------------------------|------|-------|-------|------|-------|------|
| Lane Configurations    | ↘    | ↑↑    | ↑↑↘   |      | ↘↘    | ↘    |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900  | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0  | 4.0   | 4.0   |      | 4.0   | 4.0  |
| Lane Util. Factor      | 1.00 | 0.95  | 0.91  |      | 0.97  | 0.91 |
| Frt                    | 1.00 | 1.00  | 0.95  |      | 0.98  | 0.85 |
| Flt Protected          | 0.95 | 1.00  | 1.00  |      | 0.96  | 1.00 |
| Satd. Flow (prot)      | 1593 | 3362  | 4688  |      | 3397  | 1441 |
| Flt Permitted          | 0.95 | 1.00  | 1.00  |      | 0.96  | 1.00 |
| Satd. Flow (perm)      | 1593 | 3362  | 4688  |      | 3397  | 1441 |
| Volume (vph)           | 81   | 760   | 305   | 136  | 530   | 331  |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 81   | 760   | 305   | 136  | 530   | 331  |
| RTOR Reduction (vph)   | 53   | 0     | 89    | 0    | 0     | 0    |
| Lane Group Flow (vph)  | 28   | 760   | 352   | 0    | 607   | 254  |
| Parking (#/hr)         | 0    | 0     | 0     | 0    |       |      |
| Turn Type              | Perm |       |       |      |       | Perm |
| Protected Phases       |      | 6     | 7     |      | 8     |      |
| Permitted Phases       | 6    |       |       |      |       | 8    |
| Actuated Green, G (s)  | 32.0 | 32.0  | 19.0  |      | 30.0  | 30.0 |
| Effective Green, g (s) | 31.0 | 31.0  | 18.0  |      | 29.0  | 29.0 |
| Actuated g/C Ratio     | 0.34 | 0.34  | 0.20  |      | 0.32  | 0.32 |
| Clearance Time (s)     | 3.0  | 3.0   | 3.0   |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)     | 549  | 1158  | 938   |      | 1095  | 464  |
| v/s Ratio Prot         |      | c0.23 | c0.08 |      | c0.18 |      |
| v/s Ratio Perm         | 0.02 |       |       |      |       | 0.18 |
| v/c Ratio              | 0.05 | 0.66  | 0.38  |      | 0.55  | 0.55 |
| Uniform Delay, d1      | 19.7 | 25.0  | 31.1  |      | 25.2  | 25.1 |
| Progression Factor     | 0.20 | 0.63  | 0.44  |      | 1.00  | 1.00 |
| Incremental Delay, d2  | 0.2  | 2.5   | 1.1   |      | 2.0   | 4.6  |
| Delay (s)              | 4.1  | 18.3  | 14.8  |      | 27.2  | 29.7 |
| Level of Service       | A    | B     | B     |      | C     | C    |
| Approach Delay (s)     |      | 16.9  | 14.8  |      | 27.9  |      |
| Approach LOS           |      | B     | B     |      | C     |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 20.9  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.55  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 58.5% | ICU Level of Service | B    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |



HCM Signalized Intersection Capacity Analysis  
 3438: P Street & Alhambra

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL   | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|-------|------|-------|------|------|
| Lane Configurations    |      |      |      |      | ↕↕↕  |      | ↗    | ↘     |      | ↗     | ↘    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      | 4.0  | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor      |      |      |      |      | 0.91 |      | 1.00 | 1.00  |      | 1.00  | 1.00 |      |
| Frt                    |      |      |      |      | 0.97 |      | 1.00 | 0.95  |      | 1.00  | 0.96 |      |
| Flt Protected          |      |      |      |      | 1.00 |      | 0.95 | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)      |      |      |      |      | 4911 |      | 1770 | 1774  |      | 1770  | 1791 |      |
| Flt Permitted          |      |      |      |      | 1.00 |      | 0.95 | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)      |      |      |      |      | 4911 |      | 1770 | 1774  |      | 1770  | 1791 |      |
| Volume (vph)           | 0    | 0    | 0    | 75   | 847  | 241  | 91   | 358   | 167  | 287   | 253  | 87   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 75   | 847  | 241  | 91   | 358   | 167  | 287   | 253  | 87   |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 52   | 0    | 0    | 19    | 0    | 0     | 14   | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 1111 | 0    | 91   | 506   | 0    | 287   | 326  | 0    |
| Turn Type              |      |      |      | Perm |      |      | Prot |       | Prot |       |      |      |
| Protected Phases       |      |      |      |      | 6    |      | 3    | 8     |      | 7     | 4    |      |
| Permitted Phases       |      |      |      | 6    |      |      |      |       |      |       |      |      |
| Actuated Green, G (s)  |      |      |      |      | 25.0 |      | 11.0 | 35.0  |      | 21.0  | 45.0 |      |
| Effective Green, g (s) |      |      |      |      | 24.0 |      | 10.0 | 34.0  |      | 20.0  | 44.0 |      |
| Actuated g/C Ratio     |      |      |      |      | 0.27 |      | 0.11 | 0.38  |      | 0.22  | 0.49 |      |
| Clearance Time (s)     |      |      |      |      | 3.0  |      | 3.0  | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     |      |      |      |      | 1310 |      | 197  | 670   |      | 393   | 876  |      |
| v/s Ratio Prot         |      |      |      |      |      |      | 0.05 | c0.29 |      | c0.16 | 0.18 |      |
| v/s Ratio Perm         |      |      |      |      | 0.23 |      |      |       |      |       |      |      |
| v/c Ratio              |      |      |      |      | 0.85 |      | 0.46 | 0.76  |      | 0.73  | 0.37 |      |
| Uniform Delay, d1      |      |      |      |      | 31.3 |      | 37.5 | 24.4  |      | 32.5  | 14.4 |      |
| Progression Factor     |      |      |      |      | 1.00 |      | 1.00 | 1.00  |      | 0.69  | 0.60 |      |
| Incremental Delay, d2  |      |      |      |      | 7.0  |      | 7.6  | 7.8   |      | 7.4   | 0.8  |      |
| Delay (s)              |      |      |      |      | 38.2 |      | 45.1 | 32.1  |      | 30.0  | 9.4  |      |
| Level of Service       |      |      |      |      | D    |      | D    | C     |      | C     | A    |      |
| Approach Delay (s)     |      | 0.0  |      |      | 38.2 |      |      | 34.1  |      |       | 18.8 |      |
| Approach LOS           |      | A    |      |      | D    |      |      | C     |      |       | B    |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 32.1  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.78  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 78.2% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 3444: Q Street & 29th Street

6/1/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|-------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑↑    |      |      |      |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      |      |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 0.95  |      |      |      |      |      |      |      |      | 0.91 |      |
| Frt                    |      | 0.97  |      |      |      |      |      |      |      |      | 1.00 |      |
| Flt Protected          |      | 1.00  |      |      |      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (prot)      |      | 3426  |      |      |      |      |      |      |      |      | 5035 |      |
| Flt Permitted          |      | 1.00  |      |      |      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (perm)      |      | 3426  |      |      |      |      |      |      |      |      | 5035 |      |
| Volume (vph)           | 0    | 431   | 117  | 0    | 0    | 0    | 0    | 0    | 0    | 184  | 744  | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 431   | 117  | 0    | 0    | 0    | 0    | 0    | 0    | 184  | 744  | 0    |
| RTOR Reduction (vph)   | 0    | 27    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 47   | 0    |
| Lane Group Flow (vph)  | 0    | 521   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 881  | 0    |
| Turn Type              |      |       |      |      |      |      |      |      |      | Perm |      |      |
| Protected Phases       |      | 2     |      |      |      |      |      |      |      |      |      | 4    |
| Permitted Phases       |      |       |      |      |      |      |      |      |      | 4    |      |      |
| Actuated Green, G (s)  |      | 42.0  |      |      |      |      |      |      |      |      | 42.0 |      |
| Effective Green, g (s) |      | 41.0  |      |      |      |      |      |      |      |      | 41.0 |      |
| Actuated g/C Ratio     |      | 0.46  |      |      |      |      |      |      |      |      | 0.46 |      |
| Clearance Time (s)     |      | 3.0   |      |      |      |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 1561  |      |      |      |      |      |      |      |      | 2294 |      |
| v/s Ratio Prot         |      | c0.15 |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |       |      |      |      |      |      |      |      |      | 0.17 |      |
| v/c Ratio              |      | 0.33  |      |      |      |      |      |      |      |      | 0.38 |      |
| Uniform Delay, d1      |      | 15.7  |      |      |      |      |      |      |      |      | 16.2 |      |
| Progression Factor     |      | 1.00  |      |      |      |      |      |      |      |      | 0.32 |      |
| Incremental Delay, d2  |      | 0.6   |      |      |      |      |      |      |      |      | 0.4  |      |
| Delay (s)              |      | 16.3  |      |      |      |      |      |      |      |      | 5.5  |      |
| Level of Service       |      | B     |      |      |      |      |      |      |      |      | A    |      |
| Approach Delay (s)     |      | 16.3  |      |      | 0.0  |      |      | 0.0  |      |      | 5.5  |      |
| Approach LOS           |      | B     |      |      | A    |      |      | A    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 9.5   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.36  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 40.4% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 3467: N Street & Alhambra

6/1/2005



| Movement                  | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|---------------------------|------|-------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations       |      | ↕     |      |      | ↕    |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)        | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |      | 4.0   |      |      | 4.0  |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor         |      | 1.00  |      |      | 1.00 |      |      | 1.00  |      |      | 1.00 |      |
| Fr <sub>t</sub>           |      | 0.96  |      |      | 0.99 |      |      | 0.99  |      |      | 0.99 |      |
| Fl <sub>t</sub> Protected |      | 0.98  |      |      | 0.99 |      |      | 1.00  |      |      | 1.00 |      |
| Satd. Flow (prot)         |      | 1573  |      |      | 1637 |      |      | 1649  |      |      | 1662 |      |
| Fl <sub>t</sub> Permitted |      | 0.73  |      |      | 0.84 |      |      | 0.97  |      |      | 0.98 |      |
| Satd. Flow (perm)         |      | 1177  |      |      | 1390 |      |      | 1607  |      |      | 1637 |      |
| Volume (vph)              | 238  | 170   | 193  | 54   | 198  | 30   | 25   | 500   | 62   | 12   | 418  | 24   |
| Peak-hour factor, PHF     | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 238  | 170   | 193  | 54   | 198  | 30   | 25   | 500   | 62   | 12   | 418  | 24   |
| RTOR Reduction (vph)      | 0    | 19    | 0    | 0    | 5    | 0    | 0    | 5     | 0    | 0    | 2    | 0    |
| Lane Group Flow (vph)     | 0    | 582   | 0    | 0    | 277  | 0    | 0    | 582   | 0    | 0    | 452  | 0    |
| Parking (#/hr)            | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type                 | Perm |       |      | Perm |      |      | Perm |       |      | Perm |      |      |
| Protected Phases          |      | 4     |      |      | 8    |      |      | 2     |      |      | 6    |      |
| Permitted Phases          | 4    |       |      | 8    |      |      | 2    |       |      | 6    |      |      |
| Actuated Green, G (s)     |      | 48.0  |      |      | 48.0 |      |      | 36.0  |      |      | 36.0 |      |
| Effective Green, g (s)    |      | 47.0  |      |      | 47.0 |      |      | 35.0  |      |      | 35.0 |      |
| Actuated g/C Ratio        |      | 0.52  |      |      | 0.52 |      |      | 0.39  |      |      | 0.39 |      |
| Clearance Time (s)        |      | 3.0   |      |      | 3.0  |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)        |      | 615   |      |      | 726  |      |      | 625   |      |      | 637  |      |
| v/s Ratio Prot            |      |       |      |      |      |      |      |       |      |      |      |      |
| v/s Ratio Perm            |      | c0.49 |      |      | 0.20 |      |      | c0.36 |      |      | 0.28 |      |
| v/c Ratio                 |      | 0.95  |      |      | 0.38 |      |      | 0.93  |      |      | 0.71 |      |
| Uniform Delay, d1         |      | 20.3  |      |      | 12.8 |      |      | 26.3  |      |      | 23.2 |      |
| Progression Factor        |      | 0.60  |      |      | 1.00 |      |      | 0.55  |      |      | 0.34 |      |
| Incremental Delay, d2     |      | 21.5  |      |      | 1.5  |      |      | 15.1  |      |      | 5.1  |      |
| Delay (s)                 |      | 33.6  |      |      | 14.4 |      |      | 29.5  |      |      | 13.0 |      |
| Level of Service          |      | C     |      |      | B    |      |      | C     |      |      | B    |      |
| Approach Delay (s)        |      | 33.6  |      |      | 14.4 |      |      | 29.5  |      |      | 13.0 |      |
| Approach LOS              |      | C     |      |      | B    |      |      | C     |      |      | B    |      |

**Intersection Summary**

|                                   |        |                      |     |
|-----------------------------------|--------|----------------------|-----|
| HCM Average Control Delay         | 24.7   | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 0.94   |                      |     |
| Actuated Cycle Length (s)         | 90.0   | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 100.9% | ICU Level of Service | G   |
| Analysis Period (min)             | 15     |                      |     |
| c - Critical Lane Group           |        |                      |     |

HCM Signalized Intersection Capacity Analysis  
 5802: K Street & 29th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑    | ↗    | ↖    | ↑     |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  | 4.0  | 4.0   |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00 | 1.00 | 1.00 | 1.00  |      |      |      |      |      | 0.91 |      |
| Frt                    |      | 1.00 | 0.85 | 1.00 | 1.00  |      |      |      |      |      | 0.96 |      |
| Flt Protected          |      | 1.00 | 1.00 | 0.95 | 1.00  |      |      |      |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 1863 | 1583 | 1770 | 1863  |      |      |      |      |      | 4873 |      |
| Flt Permitted          |      | 1.00 | 1.00 | 0.67 | 1.00  |      |      |      |      |      | 1.00 |      |
| Satd. Flow (perm)      |      | 1863 | 1583 | 1256 | 1863  |      |      |      |      |      | 4873 |      |
| Volume (vph)           | 0    | 129  | 261  | 200  | 642   | 0    | 0    | 0    | 0    | 87   | 849  | 323  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 129  | 261  | 200  | 642   | 0    | 0    | 0    | 0    | 87   | 849  | 323  |
| RTOR Reduction (vph)   | 0    | 0    | 22   | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 69   | 0    |
| Lane Group Flow (vph)  | 0    | 129  | 239  | 200  | 642   | 0    | 0    | 0    | 0    | 0    | 1190 | 0    |
| Turn Type              |      |      | Perm | Perm |       |      |      |      |      |      | Perm |      |
| Protected Phases       |      | 4    |      |      | 8     |      |      |      |      |      |      | 6    |
| Permitted Phases       |      |      | 4    | 8    |       |      |      |      |      | 6    |      |      |
| Actuated Green, G (s)  |      | 50.0 | 50.0 | 50.0 | 50.0  |      |      |      |      |      | 34.0 |      |
| Effective Green, g (s) |      | 49.0 | 49.0 | 49.0 | 49.0  |      |      |      |      |      | 33.0 |      |
| Actuated g/C Ratio     |      | 0.54 | 0.54 | 0.54 | 0.54  |      |      |      |      |      | 0.37 |      |
| Clearance Time (s)     |      | 3.0  | 3.0  | 3.0  | 3.0   |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 1014 | 862  | 684  | 1014  |      |      |      |      |      | 1787 |      |
| v/s Ratio Prot         |      | 0.07 |      |      | c0.34 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      | 0.15 | 0.16 |       |      |      |      |      |      | 0.24 |      |
| v/c Ratio              |      | 0.13 | 0.28 | 0.29 | 0.63  |      |      |      |      |      | 0.67 |      |
| Uniform Delay, d1      |      | 10.0 | 11.0 | 11.1 | 14.3  |      |      |      |      |      | 23.9 |      |
| Progression Factor     |      | 0.73 | 0.68 | 0.72 | 0.69  |      |      |      |      |      | 0.82 |      |
| Incremental Delay, d2  |      | 0.3  | 0.8  | 1.0  | 2.6   |      |      |      |      |      | 1.4  |      |
| Delay (s)              |      | 7.6  | 8.3  | 9.0  | 12.5  |      |      |      |      |      | 20.9 |      |
| Level of Service       |      | A    | A    | A    | B     |      |      |      |      |      | C    |      |
| Approach Delay (s)     |      | 8.0  |      |      | 11.6  |      |      | 0.0  |      |      | 20.9 |      |
| Approach LOS           |      | A    |      |      | B     |      |      | A    |      |      | C    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 15.8  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.65  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 65.8% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
5848: J Street & 30th Street

6/1/2005



| Movement               | EBL2 | EBL  | EBT   | WBR2 | NBL   | NBT  | NBR  |
|------------------------|------|------|-------|------|-------|------|------|
| Lane Configurations    |      | ↙    | ↙↙↙   | ↖    | ↖     | ↖↖   |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor      |      | 0.86 | 0.86  |      | 0.91  | 0.91 |      |
| Fr <sub>t</sub>        |      | 1.00 | 1.00  |      | 1.00  | 0.94 |      |
| Flt Protected          |      | 0.95 | 1.00  |      | 0.95  | 0.99 |      |
| Satd. Flow (prot)      |      | 1522 | 4646  |      | 1610  | 3160 |      |
| Flt Permitted          |      | 0.95 | 1.00  |      | 0.95  | 0.99 |      |
| Satd. Flow (perm)      |      | 1522 | 4646  |      | 1610  | 3160 |      |
| Volume (vph)           | 163  | 100  | 877   | 0    | 293   | 205  | 186  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 163  | 100  | 877   | 0    | 293   | 205  | 186  |
| RTOR Reduction (vph)   | 0    | 65   | 0     | 0    | 0     | 46   | 0    |
| Lane Group Flow (vph)  | 0    | 198  | 877   | 0    | 227   | 411  | 0    |
| Parking (#/hr)         |      |      | 0     | 0    |       |      | 0    |
| Turn Type              | Perm | Perm |       | Free | Perm  |      |      |
| Protected Phases       |      |      | 2     |      |       | 8    |      |
| Permitted Phases       | 2    | 2    |       | Free | 8     |      |      |
| Actuated Green, G (s)  |      | 42.0 | 42.0  |      | 42.0  | 42.0 |      |
| Effective Green, g (s) |      | 41.0 | 41.0  |      | 41.0  | 41.0 |      |
| Actuated g/C Ratio     |      | 0.46 | 0.46  |      | 0.46  | 0.46 |      |
| Clearance Time (s)     |      | 3.0  | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     |      | 693  | 2117  |      | 733   | 1440 |      |
| v/s Ratio Prot         |      |      | c0.19 |      |       |      |      |
| v/s Ratio Perm         |      | 0.13 |       |      | c0.14 | 0.13 |      |
| v/c Ratio              |      | 0.29 | 0.41  |      | 0.31  | 0.29 |      |
| Uniform Delay, d1      |      | 15.3 | 16.4  |      | 15.5  | 15.3 |      |
| Progression Factor     |      | 0.36 | 0.57  |      | 0.29  | 0.15 |      |
| Incremental Delay, d2  |      | 0.6  | 0.4   |      | 1.0   | 0.5  |      |
| Delay (s)              |      | 6.2  | 9.7   |      | 5.4   | 2.8  |      |
| Level of Service       |      | A    | A     |      | A     | A    |      |
| Approach Delay (s)     |      |      | 8.9   |      |       | 3.7  |      |
| Approach LOS           |      |      | A     |      |       | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 6.9   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.36  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 37.0% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 5849: L Street & 30th Street

6/1/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT  | WBR  | NBL                  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|-------|------|------|------|----------------------|------|------|------|------|------|
| Lane Configurations               |      |      |       |      | ↑↑↑  |      | ↖                    | ↑↑↑  |      |      |      |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      |      |       |      | 4.0  |      | 4.0                  | 4.0  |      |      |      |      |
| Lane Util. Factor                 |      |      |       |      | 0.91 |      | 0.86                 | 0.86 |      |      |      |      |
| Fr <sub>t</sub>                   |      |      |       |      | 0.97 |      | 1.00                 | 1.00 |      |      |      |      |
| Fl <sub>t</sub> Protected         |      |      |       |      | 1.00 |      | 0.95                 | 1.00 |      |      |      |      |
| Satd. Flow (prot)                 |      |      |       |      | 4936 |      | 1522                 | 4646 |      |      |      |      |
| Fl <sub>t</sub> Permitted         |      |      |       |      | 1.00 |      | 0.95                 | 1.00 |      |      |      |      |
| Satd. Flow (perm)                 |      |      |       |      | 4936 |      | 1522                 | 4646 |      |      |      |      |
| Volume (vph)                      | 0    | 0    | 0     | 0    | 439  | 107  | 288                  | 1035 | 0    | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 0    | 439  | 107  | 288                  | 1035 | 0    | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 0    | 44   | 0    | 128                  | 0    | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 0    | 502  | 0    | 160                  | 1035 | 0    | 0    | 0    | 0    |
| Parking (#/hr)                    |      |      |       |      |      | 0    |                      | 0    |      |      |      |      |
| Turn Type                         |      |      |       |      |      |      | Perm                 |      |      |      |      |      |
| Protected Phases                  |      |      |       |      | 6    |      |                      | 8    |      |      |      |      |
| Permitted Phases                  |      |      |       |      |      |      | 8                    |      |      |      |      |      |
| Actuated Green, G (s)             |      |      |       |      | 37.0 |      | 47.0                 | 47.0 |      |      |      |      |
| Effective Green, g (s)            |      |      |       |      | 36.0 |      | 46.0                 | 46.0 |      |      |      |      |
| Actuated g/C Ratio                |      |      |       |      | 0.40 |      | 0.51                 | 0.51 |      |      |      |      |
| Clearance Time (s)                |      |      |       |      | 3.0  |      | 3.0                  | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)                |      |      |       |      | 1974 |      | 778                  | 2375 |      |      |      |      |
| v/s Ratio Prot                    |      |      |       |      | 0.10 |      |                      | 0.22 |      |      |      |      |
| v/s Ratio Perm                    |      |      |       |      |      |      | 0.11                 |      |      |      |      |      |
| v/c Ratio                         |      |      |       |      | 0.25 |      | 0.21                 | 0.44 |      |      |      |      |
| Uniform Delay, d <sub>1</sub>     |      |      |       |      | 18.0 |      | 12.0                 | 13.8 |      |      |      |      |
| Progression Factor                |      |      |       |      | 0.49 |      | 0.00                 | 0.27 |      |      |      |      |
| Incremental Delay, d <sub>2</sub> |      |      |       |      | 0.3  |      | 0.4                  | 0.4  |      |      |      |      |
| Delay (s)                         |      |      |       |      | 9.0  |      | 0.4                  | 4.1  |      |      |      |      |
| Level of Service                  |      |      |       |      | A    |      | A                    | A    |      |      |      |      |
| Approach Delay (s)                |      | 0.0  |       |      | 9.0  |      |                      | 3.3  |      |      | 0.0  |      |
| Approach LOS                      |      | A    |       |      | A    |      |                      | A    |      |      | A    |      |
| <b>Intersection Summary</b>       |      |      |       |      |      |      |                      |      |      |      |      |      |
| HCM Average Control Delay         |      |      | 5.0   |      |      |      | HCM Level of Service |      | A    |      |      |      |
| HCM Volume to Capacity ratio      |      |      | 0.36  |      |      |      |                      |      |      |      |      |      |
| Actuated Cycle Length (s)         |      |      | 90.0  |      |      |      | Sum of lost time (s) |      | 8.0  |      |      |      |
| Intersection Capacity Utilization |      |      | 45.2% |      |      |      | ICU Level of Service |      | A    |      |      |      |
| Analysis Period (min)             |      |      | 15    |      |      |      |                      |      |      |      |      |      |
| c Critical Lane Group             |      |      |       |      |      |      |                      |      |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
 5880: N Street & 30th Street

6/1/2005



| Movement               | EBL  | EBT   | WBT  | WBR  | NBL  | NBT  | NBR   | NEL2 | NEL   | NER  |
|------------------------|------|-------|------|------|------|------|-------|------|-------|------|
| Lane Configurations    | ↘    | ↑     | ↗    |      |      | ↔↔↔  |       |      | ↘↗    |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0  | 4.0   | 4.0  |      |      | 4.0  |       |      | 4.0   |      |
| Lane Util. Factor      | 1.00 | 1.00  | 1.00 |      |      | 0.91 |       |      | 0.97  |      |
| Fr't                   | 1.00 | 1.00  | 0.99 |      |      | 0.98 |       |      | 0.98  |      |
| Flt Protected          | 0.95 | 1.00  | 1.00 |      |      | 0.99 |       |      | 0.96  |      |
| Satd. Flow (prot)      | 1770 | 1863  | 1836 |      |      | 4962 |       |      | 3405  |      |
| Flt Permitted          | 0.40 | 1.00  | 1.00 |      |      | 0.99 |       |      | 0.96  |      |
| Satd. Flow (perm)      | 752  | 1863  | 1836 |      |      | 4962 |       |      | 3405  |      |
| Volume (vph)           | 65   | 274   | 207  | 25   | 115  | 536  | 81    | 477  | 720   | 139  |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 65   | 274   | 207  | 25   | 115  | 536  | 81    | 477  | 720   | 139  |
| RTOR Reduction (vph)   | 0    | 0     | 5    | 0    | 0    | 17   | 0     | 0    | 0     | 0    |
| Lane Group Flow (vph)  | 65   | 274   | 227  | 0    | 0    | 715  | 0     | 0    | 1336  | 0    |
| Turn Type              | Perm |       |      | Perm |      |      | Split |      |       |      |
| Protected Phases       |      | 4     | 8    |      |      | 2    |       | 6    | 6     |      |
| Permitted Phases       | 4    |       |      |      | 2    |      |       |      |       |      |
| Actuated Green, G (s)  | 20.0 | 20.0  | 20.0 |      |      | 18.0 |       |      | 43.0  |      |
| Effective Green, g (s) | 19.0 | 19.0  | 19.0 |      |      | 17.0 |       |      | 42.0  |      |
| Actuated g/C Ratio     | 0.21 | 0.21  | 0.21 |      |      | 0.19 |       |      | 0.47  |      |
| Clearance Time (s)     | 3.0  | 3.0   | 3.0  |      |      | 3.0  |       |      | 3.0   |      |
| Lane Grp Cap (vph)     | 159  | 393   | 388  |      |      | 937  |       |      | 1589  |      |
| v/s Ratio Prot         |      | c0.15 | 0.12 |      |      |      |       |      | c0.39 |      |
| v/s Ratio Perm         | 0.09 |       |      |      |      | 0.14 |       |      |       |      |
| v/c Ratio              | 0.41 | 0.70  | 0.59 |      |      | 0.76 |       |      | 0.84  |      |
| Uniform Delay, d1      | 30.7 | 32.8  | 32.0 |      |      | 34.6 |       |      | 21.1  |      |
| Progression Factor     | 1.34 | 1.32  | 0.71 |      |      | 0.80 |       |      | 1.00  |      |
| Incremental Delay, d2  | 5.6  | 7.3   | 5.7  |      |      | 5.9  |       |      | 5.6   |      |
| Delay (s)              | 46.7 | 50.6  | 28.5 |      |      | 33.5 |       |      | 26.6  |      |
| Level of Service       | D    | D     | C    |      |      | C    |       |      | C     |      |
| Approach Delay (s)     |      | 49.9  | 28.5 |      |      | 33.5 |       |      | 26.6  |      |
| Approach LOS           |      | D     | C    |      |      | C    |       |      | C     |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 31.7  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.79  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 82.3% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 5882: P Street & 30th Street

6/1/2005



| Movement               | WBT   | WBR  | NBL2 | NBL   | NBT  |
|------------------------|-------|------|------|-------|------|
| Lane Configurations    | ↑↑↑   |      |      | ↑     | ↑↑↑  |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0   |      |      | 4.0   | 4.0  |
| Lane Util. Factor      | 0.91  |      |      | 1.00  | 0.91 |
| Frt                    | 0.95  |      |      | 1.00  | 1.00 |
| Flt Protected          | 1.00  |      |      | 0.95  | 1.00 |
| Satd. Flow (prot)      | 4840  |      |      | 1593  | 4916 |
| Flt Permitted          | 1.00  |      |      | 0.95  | 1.00 |
| Satd. Flow (perm)      | 4840  |      |      | 1593  | 4916 |
| Volume (vph)           | 592   | 281  | 308  | 198   | 473  |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 592   | 281  | 308  | 198   | 473  |
| RTOR Reduction (vph)   | 0     | 0    | 0    | 59    | 0    |
| Lane Group Flow (vph)  | 873   | 0    | 0    | 447   | 473  |
| Parking (#/hr)         |       | 0    | 0    | 0     | 0    |
| Turn Type              |       |      | Perm | Perm  |      |
| Protected Phases       | 6     |      |      |       | 8    |
| Permitted Phases       |       |      | 8    | 8     |      |
| Actuated Green, G (s)  | 34.0  |      |      | 50.0  | 50.0 |
| Effective Green, g (s) | 33.0  |      |      | 49.0  | 49.0 |
| Actuated g/C Ratio     | 0.37  |      |      | 0.54  | 0.54 |
| Clearance Time (s)     | 3.0   |      |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)     | 1775  |      |      | 867   | 2676 |
| v/s Ratio Prot         | c0.18 |      |      |       | 0.10 |
| v/s Ratio Perm         |       |      |      | c0.28 |      |
| v/c Ratio              | 0.49  |      |      | 0.52  | 0.18 |
| Uniform Delay, d1      | 22.0  |      |      | 13.0  | 10.3 |
| Progression Factor     | 0.27  |      |      | 1.00  | 1.00 |
| Incremental Delay, d2  | 0.6   |      |      | 2.2   | 0.1  |
| Delay (s)              | 6.5   |      |      | 15.2  | 10.5 |
| Level of Service       | A     |      |      | B     | B    |
| Approach Delay (s)     | 6.5   |      |      |       | 12.9 |
| Approach LOS           | A     |      |      |       | B    |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 9.9   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.51  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 52.4% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
 5886: Capitol & 30th Street

6/1/2005



| Movement               | EBL   | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|-------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    | ↵     | ↕↕   |      |      | ↕↕    |      |      | ↕↕↕  |      |      |      |      |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0   | 4.0  |      |      | 4.0   |      |      | 4.0  |      |      |      |      |
| Lane Util. Factor      | 1.00  | 0.95 |      |      | 0.95  |      |      | 0.91 |      |      |      |      |
| Frt                    | 1.00  | 1.00 |      |      | 0.95  |      |      | 0.98 |      |      |      |      |
| Flt Protected          | 0.95  | 1.00 |      |      | 1.00  |      |      | 1.00 |      |      |      |      |
| Satd. Flow (prot)      | 1770  | 3539 |      |      | 3368  |      |      | 4984 |      |      |      |      |
| Flt Permitted          | 0.95  | 1.00 |      |      | 1.00  |      |      | 1.00 |      |      |      |      |
| Satd. Flow (perm)      | 1770  | 3539 |      |      | 3368  |      |      | 4984 |      |      |      |      |
| Volume (vph)           | 125   | 234  | 0    | 0    | 472   | 225  | 139  | 1202 | 154  | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 125   | 234  | 0    | 0    | 472   | 225  | 139  | 1202 | 154  | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0     | 0    | 0    | 0    | 63    | 0    | 0    | 16   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 125   | 234  | 0    | 0    | 634   | 0    | 0    | 1479 | 0    | 0    | 0    | 0    |
| Turn Type              | Prot  |      |      |      |       |      | Perm |      |      |      |      |      |
| Protected Phases       | 7     | 4    |      |      | 8     |      |      | 2    |      |      |      |      |
| Permitted Phases       |       |      |      |      |       |      |      | 2    |      |      |      |      |
| Actuated Green, G (s)  | 16.0  | 48.0 |      |      | 29.0  |      |      | 36.0 |      |      |      |      |
| Effective Green, g (s) | 15.0  | 47.0 |      |      | 28.0  |      |      | 35.0 |      |      |      |      |
| Actuated g/C Ratio     | 0.17  | 0.52 |      |      | 0.31  |      |      | 0.39 |      |      |      |      |
| Clearance Time (s)     | 3.0   | 3.0  |      |      | 3.0   |      |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)     | 295   | 1848 |      |      | 1048  |      |      | 1938 |      |      |      |      |
| v/s Ratio Prot         | c0.07 | 0.07 |      |      | c0.19 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |       |      |      |      |       |      |      | 0.30 |      |      |      |      |
| v/c Ratio              | 0.42  | 0.13 |      |      | 0.60  |      |      | 0.76 |      |      |      |      |
| Uniform Delay, d1      | 33.6  | 11.0 |      |      | 26.3  |      |      | 23.9 |      |      |      |      |
| Progression Factor     | 0.90  | 0.84 |      |      | 0.42  |      |      | 0.72 |      |      |      |      |
| Incremental Delay, d2  | 4.1   | 0.1  |      |      | 1.3   |      |      | 2.0  |      |      |      |      |
| Delay (s)              | 34.3  | 9.4  |      |      | 12.3  |      |      | 19.2 |      |      |      |      |
| Level of Service       | C     | A    |      |      | B     |      |      | B    |      |      |      |      |
| Approach Delay (s)     |       | 18.1 |      |      | 12.3  |      |      | 19.2 |      |      | 0.0  |      |
| Approach LOS           |       | B    |      |      | B     |      |      | B    |      |      | A    |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 17.1  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.64  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 66.6% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
5888: Capitol & 29th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL   | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|-------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑↑   |      | ↙     | ↑↑   |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      | 4.0   | 4.0  |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 0.95 |      | 1.00  | 0.95 |      |      |      |      |      | 0.91 |      |
| Frt                    |      | 0.92 |      | 1.00  | 1.00 |      |      |      |      |      | 0.97 |      |
| Flt Protected          |      | 1.00 |      | 0.95  | 1.00 |      |      |      |      |      | 0.99 |      |
| Satd. Flow (prot)      |      | 3110 |      | 1770  | 3539 |      |      |      |      |      | 4755 |      |
| Flt Permitted          |      | 1.00 |      | 0.47  | 1.00 |      |      |      |      |      | 0.99 |      |
| Satd. Flow (perm)      |      | 3110 |      | 872   | 3539 |      |      |      |      |      | 4755 |      |
| Volume (vph)           | 0    | 214  | 214  | 162   | 482  | 0    | 0    | 0    | 0    | 147  | 823  | 209  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 214  | 214  | 162   | 482  | 0    | 0    | 0    | 0    | 147  | 823  | 209  |
| RTOR Reduction (vph)   | 0    | 50   | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 37   | 0    |
| Lane Group Flow (vph)  | 0    | 378  | 0    | 162   | 482  | 0    | 0    | 0    | 0    | 0    | 1142 | 0    |
| Parking (#/hr)         |      | 0    | 0    |       |      |      |      |      |      |      | 0    | 0    |
| Turn Type              |      |      |      | Perm  |      |      |      |      |      |      | Perm |      |
| Protected Phases       |      | 4    |      |       | 8    |      |      |      |      |      |      | 6    |
| Permitted Phases       |      |      |      | 8     |      |      |      |      |      | 6    |      |      |
| Actuated Green, G (s)  |      | 43.0 |      | 43.0  | 43.0 |      |      |      |      |      | 41.0 |      |
| Effective Green, g (s) |      | 42.0 |      | 42.0  | 42.0 |      |      |      |      |      | 40.0 |      |
| Actuated g/C Ratio     |      | 0.47 |      | 0.47  | 0.47 |      |      |      |      |      | 0.44 |      |
| Clearance Time (s)     |      | 3.0  |      | 3.0   | 3.0  |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 1451 |      | 407   | 1652 |      |      |      |      |      | 2113 |      |
| v/s Ratio Prot         |      | 0.12 |      |       | 0.14 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      |      | c0.19 |      |      |      |      |      |      | 0.24 |      |
| v/c Ratio              |      | 0.26 |      | 0.40  | 0.29 |      |      |      |      |      | 0.54 |      |
| Uniform Delay, d1      |      | 14.6 |      | 15.7  | 14.8 |      |      |      |      |      | 18.3 |      |
| Progression Factor     |      | 0.63 |      | 0.50  | 0.49 |      |      |      |      |      | 0.23 |      |
| Incremental Delay, d2  |      | 0.3  |      | 2.3   | 0.3  |      |      |      |      |      | 0.9  |      |
| Delay (s)              |      | 9.5  |      | 10.1  | 7.6  |      |      |      |      |      | 5.1  |      |
| Level of Service       |      | A    |      | B     | A    |      |      |      |      |      | A    |      |
| Approach Delay (s)     |      | 9.5  |      |       | 8.2  |      |      | 0.0  |      |      | 5.1  |      |
| Approach LOS           |      | A    |      |       | A    |      |      | A    |      |      | A    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 6.8   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.47  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 66.6% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 5890: Capitol & 26th St

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|-------|------|------|------|------|
| Lane Configurations    |      |      |      |      |       |      |      |       |      |      |      |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0  | 4.0  |      | 4.0  | 4.0   |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor      | 1.00 | 1.00 |      | 1.00 | 1.00  |      |      | 1.00  |      |      | 1.00 |      |
| Frt                    | 1.00 | 1.00 |      | 1.00 | 0.99  |      |      | 0.97  |      |      | 0.99 |      |
| Flt Protected          | 0.95 | 1.00 |      | 0.95 | 1.00  |      |      | 0.99  |      |      | 0.98 |      |
| Satd. Flow (prot)      | 1770 | 1670 |      | 1770 | 1667  |      |      | 1611  |      |      | 1615 |      |
| Flt Permitted          | 0.30 | 1.00 |      | 0.52 | 1.00  |      |      | 0.97  |      |      | 0.89 |      |
| Satd. Flow (perm)      | 553  | 1670 |      | 961  | 1667  |      |      | 1571  |      |      | 1476 |      |
| Volume (vph)           | 10   | 338  | 9    | 5    | 586   | 22   | 12   | 40    | 15   | 25   | 21   | 5    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 10   | 338  | 9    | 5    | 586   | 22   | 12   | 40    | 15   | 25   | 21   | 5    |
| RTOR Reduction (vph)   | 0    | 2    | 0    | 0    | 3     | 0    | 0    | 10    | 0    | 0    | 3    | 0    |
| Lane Group Flow (vph)  | 10   | 345  | 0    | 5    | 605   | 0    | 0    | 57    | 0    | 0    | 48   | 0    |
| Parking (#/hr)         |      | 0    | 0    |      | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      |      | Perm |       |      | Perm |       |      | Perm |      |      |
| Protected Phases       | 4    |      |      | 8    |       |      | 2    |       |      | 6    |      |      |
| Permitted Phases       | 4    |      |      | 8    |       |      | 2    |       |      | 6    |      |      |
| Actuated Green, G (s)  | 27.0 | 27.0 |      | 27.0 | 27.0  |      |      | 17.0  |      |      | 17.0 |      |
| Effective Green, g (s) | 26.0 | 26.0 |      | 26.0 | 26.0  |      |      | 16.0  |      |      | 16.0 |      |
| Actuated g/C Ratio     | 0.52 | 0.52 |      | 0.52 | 0.52  |      |      | 0.32  |      |      | 0.32 |      |
| Clearance Time (s)     | 3.0  | 3.0  |      | 3.0  | 3.0   |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)     | 288  | 868  |      | 500  | 867   |      |      | 503   |      |      | 472  |      |
| v/s Ratio Prot         |      | 0.21 |      |      | c0.36 |      |      |       |      |      |      |      |
| v/s Ratio Perm         | 0.02 |      |      | 0.01 |       |      |      | c0.04 |      |      | 0.03 |      |
| v/c Ratio              | 0.03 | 0.40 |      | 0.01 | 0.70  |      |      | 0.11  |      |      | 0.10 |      |
| Uniform Delay, d1      | 5.9  | 7.3  |      | 5.8  | 9.0   |      |      | 12.0  |      |      | 11.9 |      |
| Progression Factor     | 1.00 | 1.00 |      | 1.00 | 1.00  |      |      | 1.00  |      |      | 0.65 |      |
| Incremental Delay, d2  | 0.2  | 1.4  |      | 0.0  | 4.6   |      |      | 0.5   |      |      | 0.4  |      |
| Delay (s)              | 6.1  | 8.6  |      | 5.8  | 13.7  |      |      | 12.4  |      |      | 8.2  |      |
| Level of Service       | A    | A    |      | A    | B     |      |      | B     |      |      | A    |      |
| Approach Delay (s)     |      | 8.6  |      |      | 13.6  |      |      | 12.4  |      |      | 8.2  |      |
| Approach LOS           |      | A    |      |      | B     |      |      | B     |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.6  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.48  |                      |     |
| Actuated Cycle Length (s)         | 50.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 45.2% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6481: J Street & 28th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL   | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|-------|------|------|------|------|------|
| Lane Configurations    |      | ↑↑↑  |      |      |      |      |       | ↑    |      |      | ↓    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      |      |      |      |       | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor      |      | 0.91 |      |      |      |      |       | 1.00 |      |      | 1.00 |      |
| Fr't                   |      | 1.00 |      |      |      |      |       | 0.92 |      |      | 1.00 |      |
| Flt Protected          |      | 1.00 |      |      |      |      |       | 1.00 |      |      | 0.99 |      |
| Satd. Flow (prot)      |      | 4890 |      |      |      |      |       | 1549 |      |      | 1655 |      |
| Flt Permitted          |      | 1.00 |      |      |      |      |       | 1.00 |      |      | 0.93 |      |
| Satd. Flow (perm)      |      | 4890 |      |      |      |      |       | 1549 |      |      | 1560 |      |
| Volume (vph)           | 34   | 1205 | 33   | 0    | 0    | 0    | 0     | 85   | 110  | 14   | 39   | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 34   | 1205 | 33   | 0    | 0    | 0    | 0     | 85   | 110  | 14   | 39   | 0    |
| RTOR Reduction (vph)   | 0    | 3    | 0    | 0    | 0    | 0    | 0     | 28   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 1269 | 0    | 0    | 0    | 0    | 0     | 167  | 0    | 0    | 53   | 0    |
| Parking (#/hr)         | 0    | 0    | 0    |      |      |      |       | 0    | 0    | 0    | 0    |      |
| Turn Type              | Perm |      |      |      |      |      | Perm  |      |      |      |      |      |
| Protected Phases       | 4    |      |      |      |      |      | 2     |      |      |      |      |      |
| Permitted Phases       | 4    |      |      |      |      |      | 6     |      |      |      |      |      |
| Actuated Green, G (s)  | 47.0 |      |      |      |      |      | 37.0  |      |      |      |      |      |
| Effective Green, g (s) | 46.0 |      |      |      |      |      | 36.0  |      |      |      |      |      |
| Actuated g/C Ratio     | 0.51 |      |      |      |      |      | 0.40  |      |      |      |      |      |
| Clearance Time (s)     | 3.0  |      |      |      |      |      | 3.0   |      |      |      |      |      |
| Lane Grp Cap (vph)     | 2499 |      |      |      |      |      | 620   |      |      |      |      |      |
| v/s Ratio Prot         |      |      |      |      |      |      | c0.11 |      |      |      |      |      |
| v/s Ratio Perm         | 0.26 |      |      |      |      |      |       |      |      |      |      |      |
| v/c Ratio              | 0.51 |      |      |      |      |      | 0.27  |      |      |      |      |      |
| Uniform Delay, d1      | 14.5 |      |      |      |      |      | 18.2  |      |      |      |      |      |
| Progression Factor     | 1.00 |      |      |      |      |      | 0.99  |      |      |      |      |      |
| Incremental Delay, d2  | 0.7  |      |      |      |      |      | 1.1   |      |      |      |      |      |
| Delay (s)              | 15.3 |      |      |      |      |      | 19.0  |      |      |      |      |      |
| Level of Service       | B    |      |      |      |      |      | B     |      |      |      |      |      |
| Approach Delay (s)     | 15.3 |      |      |      |      |      | 19.0  |      |      |      |      |      |
| Approach LOS           | B    |      |      |      |      |      | B     |      |      |      |      |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 15.8  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.40  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 45.7% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6482: K Street & 28th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↕    | ↗    |      | ↕    | ↗    |      | ↕    | ↗    |      | ↕    | ↗    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  |      | 4.0  | 4.0  |      | 4.0  | 4.0  |      | 4.0  | 4.0  |
| Lane Util. Factor      |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |
| Fr't                   |      | 1.00 | 0.85 |      | 1.00 | 0.85 |      | 1.00 | 0.85 |      | 1.00 | 0.85 |
| Flt Protected          |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 0.99 | 1.00 |      | 0.99 | 1.00 |
| Satd. Flow (prot)      |      | 1674 | 1425 |      | 1674 | 1425 |      | 1656 | 1425 |      | 1657 | 1425 |
| Flt Permitted          |      | 0.98 | 1.00 |      | 0.99 | 1.00 |      | 0.91 | 1.00 |      | 0.92 | 1.00 |
| Satd. Flow (perm)      |      | 1644 | 1425 |      | 1660 | 1425 |      | 1532 | 1425 |      | 1542 | 1425 |
| Volume (vph)           | 9    | 247  | 10   | 18   | 655  | 113  | 42   | 127  | 116  | 24   | 78   | 8    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 9    | 247  | 10   | 18   | 655  | 113  | 42   | 127  | 116  | 24   | 78   | 8    |
| RTOR Reduction (vph)   | 0    | 0    | 4    | 0    | 0    | 23   | 0    | 0    | 85   | 0    | 0    | 6    |
| Lane Group Flow (vph)  | 0    | 256  | 6    | 0    | 673  | 90   | 0    | 169  | 31   | 0    | 102  | 2    |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      | Perm | Perm |      | Perm | Perm |      | Perm | Perm |      | Perm |
| Protected Phases       |      | 4    |      |      | 8    |      |      | 2    |      |      | 6    |      |
| Permitted Phases       | 4    |      | 4    | 8    |      | 8    | 2    |      | 2    | 6    |      | 6    |
| Actuated Green, G (s)  |      | 59.0 | 59.0 |      | 59.0 | 59.0 |      | 25.0 | 25.0 |      | 25.0 | 25.0 |
| Effective Green, g (s) |      | 58.0 | 58.0 |      | 58.0 | 58.0 |      | 24.0 | 24.0 |      | 24.0 | 24.0 |
| Actuated g/C Ratio     |      | 0.64 | 0.64 |      | 0.64 | 0.64 |      | 0.27 | 0.27 |      | 0.27 | 0.27 |
| Clearance Time (s)     |      | 3.0  | 3.0  |      | 3.0  | 3.0  |      | 3.0  | 3.0  |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |      | 1059 | 918  |      | 1070 | 918  |      | 409  | 380  |      | 411  | 380  |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      | 0.16 | 0.00 |      | 0.41 | 0.06 |      | 0.11 | 0.02 |      | 0.07 | 0.00 |
| v/c Ratio              |      | 0.24 | 0.01 |      | 0.63 | 0.10 |      | 0.41 | 0.08 |      | 0.25 | 0.01 |
| Uniform Delay, d1      |      | 6.7  | 5.7  |      | 9.6  | 6.1  |      | 27.2 | 24.7 |      | 25.9 | 24.2 |
| Progression Factor     |      | 1.00 | 1.00 |      | 0.58 | 0.65 |      | 0.92 | 0.12 |      | 0.91 | 0.84 |
| Incremental Delay, d2  |      | 0.5  | 0.0  |      | 2.1  | 0.2  |      | 2.8  | 0.4  |      | 1.4  | 0.0  |
| Delay (s)              |      | 7.3  | 5.7  |      | 7.7  | 4.1  |      | 27.7 | 3.4  |      | 25.0 | 20.3 |
| Level of Service       |      | A    | A    |      | A    | A    |      | C    | A    |      | C    | C    |
| Approach Delay (s)     |      | 7.2  |      |      | 7.1  |      |      | 17.8 |      |      | 24.7 |      |
| Approach LOS           |      | A    |      |      | A    |      |      | B    |      |      | C    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.6  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.57  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 73.4% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6483: L Street & 28th Street

6/1/2005



| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|---------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations       |      |      |      |      | ↕↕   |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |      |      |      |      | 4.0  |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor         |      |      |      |      | 0.95 |      |      | 1.00  |      |      | 1.00 |      |
| Fr <sub>t</sub>           |      |      |      |      | 0.99 |      |      | 1.00  |      |      | 0.97 |      |
| Fl <sub>t</sub> Protected |      |      |      |      | 0.99 |      |      | 0.98  |      |      | 1.00 |      |
| Satd. Flow (prot)         |      |      |      |      | 3290 |      |      | 1644  |      |      | 1624 |      |
| Fl <sub>t</sub> Permitted |      |      |      |      | 0.99 |      |      | 0.84  |      |      | 1.00 |      |
| Satd. Flow (perm)         |      |      |      |      | 3290 |      |      | 1412  |      |      | 1624 |      |
| Volume (vph)              | 0    | 0    | 0    | 166  | 824  | 103  | 93   | 142   | 0    | 0    | 87   | 26   |
| Peak-hour factor, PHF     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 0    | 0    | 0    | 166  | 824  | 103  | 93   | 142   | 0    | 0    | 87   | 26   |
| RTOR Reduction (vph)      | 0    | 0    | 0    | 0    | 9    | 0    | 0    | 0     | 0    | 0    | 12   | 0    |
| Lane Group Flow (vph)     | 0    | 0    | 0    | 0    | 1084 | 0    | 0    | 235   | 0    | 0    | 101  | 0    |
| Parking (#/hr)            | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type                 |      |      |      | Perm |      |      | Perm |       |      |      |      |      |
| Protected Phases          |      |      |      |      | 6    |      |      | 8     |      |      |      | 4    |
| Permitted Phases          |      |      |      |      | 6    |      |      | 8     |      |      |      |      |
| Actuated Green, G (s)     |      |      |      |      | 50.0 |      |      | 34.0  |      |      |      | 34.0 |
| Effective Green, g (s)    |      |      |      |      | 49.0 |      |      | 33.0  |      |      |      | 33.0 |
| Actuated g/C Ratio        |      |      |      |      | 0.54 |      |      | 0.37  |      |      |      | 0.37 |
| Clearance Time (s)        |      |      |      |      | 3.0  |      |      | 3.0   |      |      |      | 3.0  |
| Lane Grp Cap (vph)        |      |      |      |      | 1791 |      |      | 518   |      |      |      | 595  |
| v/s Ratio Prot            |      |      |      |      |      |      |      |       |      |      |      | 0.06 |
| v/s Ratio Perm            |      |      |      |      | 0.33 |      |      | c0.17 |      |      |      |      |
| v/c Ratio                 |      |      |      |      | 0.61 |      |      | 0.45  |      |      |      | 0.17 |
| Uniform Delay, d1         |      |      |      |      | 13.9 |      |      | 21.7  |      |      |      | 19.2 |
| Progression Factor        |      |      |      |      | 0.52 |      |      | 1.01  |      |      |      | 0.36 |
| Incremental Delay, d2     |      |      |      |      | 1.5  |      |      | 1.4   |      |      |      | 0.6  |
| Delay (s)                 |      |      |      |      | 8.7  |      |      | 23.3  |      |      |      | 7.5  |
| Level of Service          |      |      |      |      | A    |      |      | C     |      |      |      | A    |
| Approach Delay (s)        |      | 0.0  |      |      | 8.7  |      |      | 23.3  |      |      |      | 7.5  |
| Approach LOS              |      | A    |      |      | A    |      |      | C     |      |      |      | A    |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.0  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.54  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 56.8% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

# HCM Signalized Intersection Capacity Analysis

6484: Capitol & 28th Street

6/1/2005



| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|---------------------------|------|------|------|------|-------|------|------|-------|------|------|------|------|
| Lane Configurations       |      | ↕    |      | ↗    | ↖     |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |      | 4.0  |      | 4.0  | 4.0   |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor         |      | 1.00 |      | 1.00 | 1.00  |      |      | 1.00  |      |      | 1.00 |      |
| Fr <sub>t</sub>           |      | 0.99 |      | 1.00 | 0.98  |      |      | 0.97  |      |      | 0.99 |      |
| Fl <sub>t</sub> Protected |      | 1.00 |      | 0.95 | 1.00  |      |      | 0.98  |      |      | 0.98 |      |
| Satd. Flow (prot)         |      | 1664 |      | 1770 | 1637  |      |      | 1583  |      |      | 1635 |      |
| Fl <sub>t</sub> Permitted |      | 0.84 |      | 0.38 | 1.00  |      |      | 0.73  |      |      | 0.74 |      |
| Satd. Flow (perm)         |      | 1404 |      | 710  | 1637  |      |      | 1190  |      |      | 1230 |      |
| Volume (vph)              | 20   | 341  | 14   | 66   | 418   | 78   | 276  | 166   | 148  | 82   | 148  | 15   |
| Peak-hour factor, PHF     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 20   | 341  | 14   | 66   | 418   | 78   | 276  | 166   | 148  | 82   | 148  | 15   |
| RTOR Reduction (vph)      | 0    | 1    | 0    | 0    | 7     | 0    | 0    | 13    | 0    | 0    | 3    | 0    |
| Lane Group Flow (vph)     | 0    | 374  | 0    | 66   | 489   | 0    | 0    | 577   | 0    | 0    | 242  | 0    |
| Parking (#/hr)            | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type                 | Perm |      |      | Perm |       |      | Perm |       |      | Perm |      |      |
| Protected Phases          |      | 4    |      |      | 8     |      |      | 2     |      |      | 6    |      |
| Permitted Phases          | 4    |      |      | 8    |       |      | 2    |       |      | 6    |      |      |
| Actuated Green, G (s)     |      | 32.0 |      | 32.0 | 32.0  |      |      | 52.0  |      |      | 52.0 |      |
| Effective Green, g (s)    |      | 31.0 |      | 31.0 | 31.0  |      |      | 51.0  |      |      | 51.0 |      |
| Actuated g/C Ratio        |      | 0.34 |      | 0.34 | 0.34  |      |      | 0.57  |      |      | 0.57 |      |
| Clearance Time (s)        |      | 3.0  |      | 3.0  | 3.0   |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)        |      | 484  |      | 245  | 564   |      |      | 674   |      |      | 697  |      |
| v/s Ratio Prot            |      |      |      |      | c0.30 |      |      |       |      |      |      |      |
| v/s Ratio Perm            |      | 0.27 |      | 0.09 |       |      |      | c0.48 |      |      | 0.20 |      |
| v/c Ratio                 |      | 0.77 |      | 0.27 | 0.87  |      |      | 0.86  |      |      | 0.35 |      |
| Uniform Delay, d1         |      | 26.3 |      | 21.3 | 27.6  |      |      | 16.4  |      |      | 10.5 |      |
| Progression Factor        |      | 1.00 |      | 0.55 | 0.60  |      |      | 0.63  |      |      | 1.13 |      |
| Incremental Delay, d2     |      | 11.3 |      | 2.5  | 15.6  |      |      | 12.0  |      |      | 1.2  |      |
| Delay (s)                 |      | 37.7 |      | 14.3 | 32.0  |      |      | 22.3  |      |      | 13.1 |      |
| Level of Service          |      | D    |      | B    | C     |      |      | C     |      |      | B    |      |
| Approach Delay (s)        |      | 37.7 |      |      | 29.9  |      |      | 22.3  |      |      | 13.1 |      |
| Approach LOS              |      | D    |      |      | C     |      |      | C     |      |      | B    |      |

## Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 26.7  | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 0.86  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 91.5% | ICU Level of Service | F   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6485: N Street & 28th Street

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|-------|------|
| Lane Configurations    |      | ↔    |      |      | ↔     |      |      | ↑    |      |      | ↑     |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      | 4.0  |      |      | 4.0   |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor      |      | 0.95 |      |      | 1.00  |      |      | 1.00 |      |      | 1.00  |      |
| Frt                    |      | 1.00 |      |      | 0.88  |      |      | 0.95 |      |      | 1.00  |      |
| Flt Protected          |      | 0.99 |      |      | 1.00  |      |      | 1.00 |      |      | 0.97  |      |
| Satd. Flow (prot)      |      | 3334 |      |      | 1465  |      |      | 1601 |      |      | 1622  |      |
| Flt Permitted          |      | 0.86 |      |      | 0.93  |      |      | 1.00 |      |      | 0.73  |      |
| Satd. Flow (perm)      |      | 2898 |      |      | 1376  |      |      | 1601 |      |      | 1230  |      |
| Volume (vph)           | 43   | 334  | 7    | 49   | 0     | 469  | 0    | 101  | 51   | 102  | 49    | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 43   | 334  | 7    | 49   | 0     | 469  | 0    | 101  | 51   | 102  | 49    | 0    |
| RTOR Reduction (vph)   | 0    | 1    | 0    | 0    | 208   | 0    | 0    | 20   | 0    | 0    | 0     | 0    |
| Lane Group Flow (vph)  | 0    | 383  |      | 0    | 0     | 310  | 0    | 0    | 132  | 0    | 0     | 151  |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Turn Type              | Perm |      |      | Perm |       |      |      |      |      | Perm |       |      |
| Protected Phases       |      | 2    |      |      | 6     |      |      | 8    |      |      | 4     |      |
| Permitted Phases       | 2    |      |      | 6    |       |      |      |      |      | 4    |       |      |
| Actuated Green, G (s)  |      | 51.0 |      |      | 51.0  |      |      | 33.0 |      |      | 33.0  |      |
| Effective Green, g (s) |      | 50.0 |      |      | 50.0  |      |      | 32.0 |      |      | 32.0  |      |
| Actuated g/C Ratio     |      | 0.56 |      |      | 0.56  |      |      | 0.36 |      |      | 0.36  |      |
| Clearance Time (s)     |      | 3.0  |      |      | 3.0   |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)     |      | 1610 |      |      | 764   |      |      | 569  |      |      | 437   |      |
| v/s Ratio Prot         |      |      |      |      |       |      |      | 0.08 |      |      |       |      |
| v/s Ratio Perm         |      | 0.13 |      |      | c0.23 |      |      |      |      |      | c0.12 |      |
| v/c Ratio              |      | 0.24 |      |      | 0.41  |      |      | 0.23 |      |      | 0.35  |      |
| Uniform Delay, d1      |      | 10.2 |      |      | 11.5  |      |      | 20.4 |      |      | 21.3  |      |
| Progression Factor     |      | 1.00 |      |      | 4.34  |      |      | 1.00 |      |      | 1.18  |      |
| Incremental Delay, d2  |      | 0.3  |      |      | 1.2   |      |      | 1.0  |      |      | 2.1   |      |
| Delay (s)              |      | 10.6 |      |      | 51.0  |      |      | 21.3 |      |      | 27.2  |      |
| Level of Service       |      | B    |      |      | D     |      |      | C    |      |      | C     |      |
| Approach Delay (s)     |      | 10.6 |      |      | 51.0  |      |      | 21.3 |      |      | 27.2  |      |
| Approach LOS           |      | B    |      |      | D     |      |      | C    |      |      | C     |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 31.4  | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 0.38  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 72.4% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
6511: K Street & Alhambra

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↖    | ↗    |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  |      | 4.0  |      |      | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00 | 1.00 |      | 1.00 |      |      | 0.95 |      |      | 0.95 |      |
| Frt                    |      | 1.00 | 0.85 |      | 0.99 |      |      | 0.99 |      |      | 0.95 |      |
| Flt Protected          |      | 0.97 | 1.00 |      | 0.99 |      |      | 0.99 |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 1812 | 1583 |      | 1822 |      |      | 3454 |      |      | 3344 |      |
| Flt Permitted          |      | 0.84 | 1.00 |      | 0.93 |      |      | 0.55 |      |      | 0.95 |      |
| Satd. Flow (perm)      |      | 1563 | 1583 |      | 1717 |      |      | 1932 |      |      | 3192 |      |
| Volume (vph)           | 44   | 35   | 110  | 25   | 61   | 6    | 131  | 321  | 36   | 3    | 711  | 413  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 44   | 35   | 110  | 25   | 61   | 6    | 131  | 321  | 36   | 3    | 711  | 413  |
| RTOR Reduction (vph)   | 0    | 0    | 73   | 0    | 3    | 0    | 0    | 6    | 0    | 0    | 92   | 0    |
| Lane Group Flow (vph)  | 0    | 79   | 37   | 0    | 89   | 0    | 0    | 482  | 0    | 0    | 1035 | 0    |
| Turn Type              | Perm |      | Perm | Perm |      |      | Perm |      |      | Perm |      |      |
| Protected Phases       |      | 4    |      |      | 8    |      |      | 2    |      |      | 6    |      |
| Permitted Phases       | 4    |      | 4    | 8    |      |      | 2    |      |      | 6    |      |      |
| Actuated Green, G (s)  |      | 31.0 | 31.0 |      | 31.0 |      |      | 53.0 |      |      | 53.0 |      |
| Effective Green, g (s) |      | 30.0 | 30.0 |      | 30.0 |      |      | 52.0 |      |      | 52.0 |      |
| Actuated g/C Ratio     |      | 0.33 | 0.33 |      | 0.33 |      |      | 0.58 |      |      | 0.58 |      |
| Clearance Time (s)     |      | 3.0  | 3.0  |      | 3.0  |      |      | 3.0  |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 521  | 528  |      | 572  |      |      | 1116 |      |      | 1844 |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      | 0.05 | 0.02 |      | 0.05 |      |      | 0.25 |      |      | 0.32 |      |
| v/c Ratio              |      | 0.15 | 0.07 |      | 0.16 |      |      | 0.43 |      |      | 0.56 |      |
| Uniform Delay, d1      |      | 21.1 | 20.5 |      | 21.1 |      |      | 10.7 |      |      | 11.9 |      |
| Progression Factor     |      | 1.18 | 2.01 |      | 1.00 |      |      | 1.22 |      |      | 0.54 |      |
| Incremental Delay, d2  |      | 0.6  | 0.2  |      | 0.6  |      |      | 0.8  |      |      | 0.9  |      |
| Delay (s)              |      | 25.4 | 41.5 |      | 21.7 |      |      | 13.8 |      |      | 7.3  |      |
| Level of Service       |      | C    | D    |      | C    |      |      | B    |      |      | A    |      |
| Approach Delay (s)     |      | 34.8 |      |      | 21.7 |      |      | 13.8 |      |      | 7.3  |      |
| Approach LOS           |      | C    |      |      | C    |      |      | B    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 12.4  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.41  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 68.4% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 9622: K Street & 30th Street

6/1/2005



| Movement                          | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations               | ↖    | ↗    |      |      | ↖     | ↗    |      | ↕    |      |      |      |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               | 4.0  | 4.0  |      |      | 4.0   | 4.0  |      | 4.0  |      |      |      |      |
| Lane Util. Factor                 | 1.00 | 1.00 |      |      | 1.00  | 1.00 |      | 0.91 |      |      |      |      |
| Fr <sub>t</sub>                   | 1.00 | 1.00 |      |      | 1.00  | 0.85 |      | 0.99 |      |      |      |      |
| Fl <sub>t</sub> Protected         | 0.95 | 1.00 |      |      | 1.00  | 1.00 |      | 0.98 |      |      |      |      |
| Satd. Flow (prot)                 | 1770 | 1863 |      |      | 1863  | 1583 |      | 4936 |      |      |      |      |
| Fl <sub>t</sub> Permitted         | 0.35 | 1.00 |      |      | 1.00  | 1.00 |      | 0.98 |      |      |      |      |
| Satd. Flow (perm)                 | 645  | 1863 |      |      | 1863  | 1583 |      | 4936 |      |      |      |      |
| Volume (vph)                      | 74   | 142  | 0    | 0    | 516   | 42   | 303  | 565  | 90   | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 74   | 142  | 0    | 0    | 516   | 42   | 303  | 565  | 90   | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0    | 0    | 0    | 0    | 0     | 16   | 0    | 14   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 74   | 142  | 0    | 0    | 516   | 26   | 0    | 944  | 0    | 0    | 0    | 0    |
| Turn Type                         | Perm |      |      |      | Perm  |      | Perm |      |      |      |      |      |
| Protected Phases                  |      | 4    |      |      | 8     |      |      | 2    |      |      |      |      |
| Permitted Phases                  | 4    |      |      |      |       | 8    | 2    |      |      |      |      |      |
| Actuated Green, G (s)             | 49.0 | 49.0 |      |      | 49.0  | 49.0 |      | 35.0 |      |      |      |      |
| Effective Green, g (s)            | 48.0 | 48.0 |      |      | 48.0  | 48.0 |      | 34.0 |      |      |      |      |
| Actuated g/C Ratio                | 0.53 | 0.53 |      |      | 0.53  | 0.53 |      | 0.38 |      |      |      |      |
| Clearance Time (s)                | 3.0  | 3.0  |      |      | 3.0   | 3.0  |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)                | 344  | 994  |      |      | 994   | 844  |      | 1865 |      |      |      |      |
| v/s Ratio Prot                    |      | 0.08 |      |      | c0.28 |      |      |      |      |      |      |      |
| v/s Ratio Perm                    | 0.11 |      |      |      |       | 0.02 |      | 0.19 |      |      |      |      |
| v/c Ratio                         | 0.22 | 0.14 |      |      | 0.52  | 0.03 |      | 0.51 |      |      |      |      |
| Uniform Delay, d <sub>1</sub>     | 11.1 | 10.6 |      |      | 13.6  | 10.0 |      | 21.5 |      |      |      |      |
| Progression Factor                | 0.76 | 0.78 |      |      | 0.89  | 0.77 |      | 0.33 |      |      |      |      |
| Incremental Delay, d <sub>2</sub> | 1.4  | 0.3  |      |      | 1.7   | 0.1  |      | 0.9  |      |      |      |      |
| Delay (s)                         | 9.8  | 8.5  |      |      | 13.7  | 7.7  |      | 8.1  |      |      |      |      |
| Level of Service                  | A    | A    |      |      | B     | A    |      | A    |      |      |      |      |
| Approach Delay (s)                |      | 9.0  |      |      | 13.3  |      |      | 8.1  |      |      | 0.0  |      |
| Approach LOS                      |      | A    |      |      | B     |      |      | A    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 9.9   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.51  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 65.8% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

CUMULATIVE PLUS SUTTER PROJECT  
WITH SMART PLAN

PM Peak Hour

Signalized Intersections

(pm7)



HCM Signalized Intersection Capacity Analysis  
 2004: L Street & 21th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      |      | ↑↑   |      |      | ↑↑↑  |      |      |      |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      |      | 4.0  |      |      |      |      |
| Lane Util. Factor      |      |      |      |      | 0.95 |      |      | 0.91 |      |      |      |      |
| Frt                    |      |      |      |      | 0.97 |      |      | 1.00 |      |      |      |      |
| Flt Protected          |      |      |      |      | 1.00 |      |      | 0.99 |      |      |      |      |
| Satd. Flow (prot)      |      |      |      |      | 3262 |      |      | 4887 |      |      |      |      |
| Flt Permitted          |      |      |      |      | 1.00 |      |      | 0.99 |      |      |      |      |
| Satd. Flow (perm)      |      |      |      |      | 3262 |      |      | 4887 |      |      |      |      |
| Volume (vph)           | 0    | 0    | 0    | 0    | 713  | 178  | 210  | 1570 | 0    | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 0    | 713  | 178  | 210  | 1570 | 0    | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 7    | 0    | 0    | 28   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 884  | 0    | 0    | 1752 | 0    | 0    | 0    | 0    |
| Parking (#/hr)         | 0    | 0    |      |      | 0    | 0    | 0    | 0    | 0    |      |      |      |
| Turn Type              |      |      |      |      |      |      | Perm |      |      |      |      |      |
| Protected Phases       |      |      |      |      | 6    |      |      | 8    |      |      |      |      |
| Permitted Phases       |      |      |      |      |      |      | 8    |      |      |      |      |      |
| Actuated Green, G (s)  |      |      |      |      | 25.0 |      |      | 29.0 |      |      |      |      |
| Effective Green, g (s) |      |      |      |      | 24.0 |      |      | 28.0 |      |      |      |      |
| Actuated g/C Ratio     |      |      |      |      | 0.40 |      |      | 0.47 |      |      |      |      |
| Clearance Time (s)     |      |      |      |      | 3.0  |      |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)     |      |      |      |      | 1305 |      |      | 2281 |      |      |      |      |
| v/s Ratio Prot         |      |      |      |      | 0.27 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      |      |      |      |      |      | 0.36 |      |      |      |      |
| v/c Ratio              |      |      |      |      | 0.68 |      |      | 0.77 |      |      |      |      |
| Uniform Delay, d1      |      |      |      |      | 14.8 |      |      | 13.3 |      |      |      |      |
| Progression Factor     |      |      |      |      | 0.49 |      |      | 1.00 |      |      |      |      |
| Incremental Delay, d2  |      |      |      |      | 2.6  |      |      | 2.5  |      |      |      |      |
| Delay (s)              |      |      |      |      | 9.8  |      |      | 15.8 |      |      |      |      |
| Level of Service       |      |      |      |      | A    |      |      | B    |      |      |      |      |
| Approach Delay (s)     |      | 0.0  |      |      | 9.8  |      |      | 15.8 |      |      | 0.0  |      |
| Approach LOS           |      | A    |      |      | A    |      |      | B    |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 13.8  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.73  |                      |     |
| Actuated Cycle Length (s)         | 60.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 66.7% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 2012: J Street & 21th Street

6/1/2005



| Movement                          | EBL  | EBT   | EBR  | WBL  | WBT                  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|-------|------|------|----------------------|------|------|------|------|------|------|------|
| Lane Configurations               |      | ↑↑↑   |      |      |                      |      |      | ↑↑↑  |      |      |      |      |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0   |      |      |                      |      |      | 4.0  |      |      |      |      |
| Lane Util. Factor                 |      | 0.91  |      |      |                      |      |      | 0.91 |      |      |      |      |
| Frt                               |      | 1.00  |      |      |                      |      |      | 0.97 |      |      |      |      |
| Flt Protected                     |      | 1.00  |      |      |                      |      |      | 1.00 |      |      |      |      |
| Satd. Flow (prot)                 |      | 4906  |      |      |                      |      |      | 4757 |      |      |      |      |
| Flt Permitted                     |      | 1.00  |      |      |                      |      |      | 1.00 |      |      |      |      |
| Satd. Flow (perm)                 |      | 4906  |      |      |                      |      |      | 4757 |      |      |      |      |
| Volume (vph)                      | 79   | 1897  | 0    | 0    | 0                    | 0    | 0    | 1392 | 382  | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00 | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 79   | 1897  | 0    | 0    | 0                    | 0    | 0    | 1392 | 382  | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0    | 6     | 0    | 0    | 0                    | 0    | 0    | 2    | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 0    | 1970  | 0    | 0    | 0                    | 0    | 0    | 1772 | 0    | 0    | 0    | 0    |
| Parking (#/hr)                    | 0    | 0     |      |      |                      |      |      | 0    | 0    |      |      |      |
| Turn Type                         | Perm |       |      |      |                      |      |      |      |      |      |      |      |
| Protected Phases                  |      | 2     |      |      |                      |      |      | 8    |      |      |      |      |
| Permitted Phases                  | 2    |       |      |      |                      |      |      |      |      |      |      |      |
| Actuated Green, G (s)             |      | 28.0  |      |      |                      |      |      | 26.0 |      |      |      |      |
| Effective Green, g (s)            |      | 27.0  |      |      |                      |      |      | 25.0 |      |      |      |      |
| Actuated g/C Ratio                |      | 0.45  |      |      |                      |      |      | 0.42 |      |      |      |      |
| Clearance Time (s)                |      | 3.0   |      |      |                      |      |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)                |      | 2208  |      |      |                      |      |      | 1982 |      |      |      |      |
| v/s Ratio Prot                    |      |       |      |      |                      |      |      | 0.37 |      |      |      |      |
| v/s Ratio Perm                    |      | 0.40  |      |      |                      |      |      |      |      |      |      |      |
| v/c Ratio                         |      | 0.89  |      |      |                      |      |      | 0.89 |      |      |      |      |
| Uniform Delay, d1                 |      | 15.2  |      |      |                      |      |      | 16.3 |      |      |      |      |
| Progression Factor                |      | 0.60  |      |      |                      |      |      | 0.40 |      |      |      |      |
| Incremental Delay, d2             |      | 4.1   |      |      |                      |      |      | 4.5  |      |      |      |      |
| Delay (s)                         |      | 13.3  |      |      |                      |      |      | 10.9 |      |      |      |      |
| Level of Service                  |      | B     |      |      |                      |      |      | B    |      |      |      |      |
| Approach Delay (s)                |      | 13.3  |      |      | 0.0                  |      |      | 10.9 |      |      | 0.0  |      |
| Approach LOS                      |      | B     |      |      | A                    |      |      | B    |      |      | A    |      |
| <b>Intersection Summary</b>       |      |       |      |      |                      |      |      |      |      |      |      |      |
| HCM Average Control Delay         |      | 12.2  |      |      | HCM Level of Service |      |      | B    |      |      |      |      |
| HCM Volume to Capacity ratio      |      | 0.89  |      |      |                      |      |      |      |      |      |      |      |
| Actuated Cycle Length (s)         |      | 60.0  |      |      | Sum of lost time (s) |      |      | 8.0  |      |      |      |      |
| Intersection Capacity Utilization |      | 80.3% |      |      | ICU Level of Service |      |      | D    |      |      |      |      |
| Analysis Period (min)             |      | 15    |      |      |                      |      |      |      |      |      |      |      |
| c Critical Lane Group             |      |       |      |      |                      |      |      |      |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
 2074: J Street & 19th Street

6/1/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT                  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |  |
|-----------------------------------|------|------|-------|------|----------------------|------|------|------|------|------|------|------|--|
| Lane Configurations               |      | ↑↑↑  |       |      |                      |      |      |      |      |      | ↑↑↑  |      |  |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |  |
| Total Lost time (s)               |      | 4.0  |       |      |                      |      |      |      |      |      | 4.0  |      |  |
| Lane Util. Factor                 |      | 0.91 |       |      |                      |      |      |      |      |      | 0.91 |      |  |
| Frt                               |      | 0.96 |       |      |                      |      |      |      |      |      | 1.00 |      |  |
| Flt Protected                     |      | 1.00 |       |      |                      |      |      |      |      |      | 0.99 |      |  |
| Satd. Flow (prot)                 |      | 4737 |       |      |                      |      |      |      |      |      | 4843 |      |  |
| Flt Permitted                     |      | 1.00 |       |      |                      |      |      |      |      |      | 0.99 |      |  |
| Satd. Flow (perm)                 |      | 4737 |       |      |                      |      |      |      |      |      | 4843 |      |  |
| Volume (vph)                      | 0    | 1713 | 550   | 0    | 0                    | 0    | 0    | 0    | 0    | 198  | 457  | 0    |  |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |  |
| Adj. Flow (vph)                   | 0    | 1713 | 550   | 0    | 0                    | 0    | 0    | 0    | 0    | 198  | 457  | 0    |  |
| RTOR Reduction (vph)              | 0    | 45   | 0     | 0    | 0                    | 0    | 0    | 0    | 0    | 0    | 17   | 0    |  |
| Lane Group Flow (vph)             | 0    | 2218 | 0     | 0    | 0                    | 0    | 0    | 0    | 0    | 0    | 638  | 0    |  |
| Parking (#/hr)                    |      | 0    | 0     |      |                      |      |      |      |      | 0    | 0    |      |  |
| Turn Type                         |      |      |       |      |                      |      |      |      |      | Perm |      |      |  |
| Protected Phases                  |      | 2    |       |      |                      |      |      |      |      |      | 4    |      |  |
| Permitted Phases                  |      |      |       |      |                      |      |      |      |      | 4    |      |      |  |
| Actuated Green, G (s)             |      | 37.0 |       |      |                      |      |      |      |      |      | 17.0 |      |  |
| Effective Green, g (s)            |      | 36.0 |       |      |                      |      |      |      |      |      | 16.0 |      |  |
| Actuated g/C Ratio                |      | 0.60 |       |      |                      |      |      |      |      |      | 0.27 |      |  |
| Clearance Time (s)                |      | 3.0  |       |      |                      |      |      |      |      |      | 3.0  |      |  |
| Lane Grp Cap (vph)                |      | 2842 |       |      |                      |      |      |      |      |      | 1291 |      |  |
| v/s Ratio Prot                    |      | 0.47 |       |      |                      |      |      |      |      |      |      |      |  |
| v/s Ratio Perm                    |      |      |       |      |                      |      |      |      |      |      | 0.13 |      |  |
| v/c Ratio                         |      | 0.78 |       |      |                      |      |      |      |      |      | 0.49 |      |  |
| Uniform Delay, d1                 |      | 9.0  |       |      |                      |      |      |      |      |      | 18.6 |      |  |
| Progression Factor                |      | 1.00 |       |      |                      |      |      |      |      |      | 1.00 |      |  |
| Incremental Delay, d2             |      | 2.2  |       |      |                      |      |      |      |      |      | 1.4  |      |  |
| Delay (s)                         |      | 11.2 |       |      |                      |      |      |      |      |      | 19.9 |      |  |
| Level of Service                  |      | B    |       |      |                      |      |      |      |      |      | B    |      |  |
| Approach Delay (s)                |      | 11.2 |       |      | 0.0                  |      |      | 0.0  |      |      | 19.9 |      |  |
| Approach LOS                      |      | B    |       |      | A                    |      |      | A    |      |      | B    |      |  |
| <b>Intersection Summary</b>       |      |      |       |      |                      |      |      |      |      |      |      |      |  |
| HCM Average Control Delay         |      |      | 13.2  |      | HCM Level of Service |      |      |      |      |      |      | B    |  |
| HCM Volume to Capacity ratio      |      |      | 0.69  |      |                      |      |      |      |      |      |      |      |  |
| Actuated Cycle Length (s)         |      |      | 60.0  |      | Sum of lost time (s) |      |      |      |      |      | 8.0  |      |  |
| Intersection Capacity Utilization |      |      | 64.9% |      | ICU Level of Service |      |      |      |      |      | C    |      |  |
| Analysis Period (min)             |      |      | 15    |      |                      |      |      |      |      |      |      |      |  |
| c Critical Lane Group             |      |      |       |      |                      |      |      |      |      |      |      |      |  |

HCM Signalized Intersection Capacity Analysis  
 2088: L Street & 29th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      | ↙    | ↕    |      |      |      |      |      | ↕    | ↗    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      |      | 4.0  | 4.0  |      |      |      |      |      | 4.0  | 4.0  |
| Lane Util. Factor      |      |      |      | 1.00 | 0.95 |      |      |      |      |      | 0.86 | 0.86 |
| Fr <sub>t</sub>        |      |      |      | 1.00 | 1.00 |      |      |      |      |      | 1.00 | 0.85 |
| Flt Protected          |      |      |      | 0.95 | 1.00 |      |      |      |      |      | 1.00 | 1.00 |
| Satd. Flow (prot)      |      |      |      | 1770 | 3539 |      |      |      |      |      | 4646 | 1226 |
| Flt Permitted          |      |      |      | 0.95 | 1.00 |      |      |      |      |      | 1.00 | 1.00 |
| Satd. Flow (perm)      |      |      |      | 1770 | 3539 |      |      |      |      |      | 4646 | 1226 |
| Volume (vph)           | 0    | 0    | 0    | 253  | 459  | 0    | 0    | 0    | 0    | 0    | 1494 | 175  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 253  | 459  | 0    | 0    | 0    | 0    | 0    | 1494 | 175  |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 15   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 82   |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 238  | 459  | 0    | 0    | 0    | 0    | 0    | 1494 | 93   |
| Parking (#/hr)         |      |      | 0    |      |      |      |      |      |      |      | 0    | 0    |
| Turn Type              |      |      |      | Perm |      |      |      |      |      |      |      | Perm |
| Protected Phases       |      |      |      |      | 6    |      |      |      |      |      |      | 4    |
| Permitted Phases       |      |      |      | 6    |      |      |      |      |      |      |      | 4    |
| Actuated Green, G (s)  |      |      |      | 35.0 | 35.0 |      |      |      |      |      | 49.0 | 49.0 |
| Effective Green, g (s) |      |      |      | 34.0 | 34.0 |      |      |      |      |      | 48.0 | 48.0 |
| Actuated g/C Ratio     |      |      |      | 0.38 | 0.38 |      |      |      |      |      | 0.53 | 0.53 |
| Clearance Time (s)     |      |      |      | 3.0  | 3.0  |      |      |      |      |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |      |      |      | 669  | 1337 |      |      |      |      |      | 2478 | 654  |
| v/s Ratio Prot         |      |      |      |      | 0.13 |      |      |      |      |      | 0.32 |      |
| v/s Ratio Perm         |      |      |      | 0.13 |      |      |      |      |      |      |      | 0.08 |
| v/c Ratio              |      |      |      | 0.36 | 0.34 |      |      |      |      |      | 0.60 | 0.14 |
| Uniform Delay, d1      |      |      |      | 20.1 | 20.0 |      |      |      |      |      | 14.4 | 10.6 |
| Progression Factor     |      |      |      | 0.47 | 0.52 |      |      |      |      |      | 0.62 | 0.00 |
| Incremental Delay, d2  |      |      |      | 1.5  | 0.7  |      |      |      |      |      | 0.9  | 0.4  |
| Delay (s)              |      |      |      | 11.0 | 11.1 |      |      |      |      |      | 9.9  | 0.4  |
| Level of Service       |      |      |      | B    | B    |      |      |      |      |      | A    | A    |
| Approach Delay (s)     |      | 0.0  |      |      | 11.0 |      |      | 0.0  |      |      | 8.9  |      |
| Approach LOS           |      | A    |      |      | B    |      |      | A    |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 9.5   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.50  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 50.8% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
 2239: L Street & Alhambra

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      |      | ↕     |      |      | ↕    |      |      | ↕    | ↕    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0   |      |      | 4.0  |      |      | 4.0  | 4.0  |
| Lane Util. Factor      |      |      |      |      | 1.00  |      |      | 1.00 |      |      | 1.00 | 1.00 |
| Frt                    |      |      |      |      | 0.98  |      |      | 0.98 |      |      | 1.00 | 0.85 |
| Flt Protected          |      |      |      |      | 0.99  |      |      | 0.99 |      |      | 1.00 | 1.00 |
| Satd. Flow (prot)      |      |      |      |      | 1623  |      |      | 1621 |      |      | 1858 | 1425 |
| Flt Permitted          |      |      |      |      | 0.99  |      |      | 0.65 |      |      | 0.94 | 1.00 |
| Satd. Flow (perm)      |      |      |      |      | 1623  |      |      | 1062 |      |      | 1742 | 1425 |
| Volume (vph)           | 0    | 0    | 0    | 58   | 211   | 56   | 143  | 529  | 150  | 42   | 764  | 290  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 58   | 211   | 56   | 143  | 529  | 150  | 42   | 764  | 290  |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 8     | 0    | 0    | 9    | 0    | 0    | 0    | 62   |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 317   | 0    | 0    | 813  | 0    | 0    | 806  | 228  |
| Parking (#/hr)         |      |      |      | 0    | 0     | 0    | 0    | 0    | 0    |      |      | 0    |
| Turn Type              |      |      |      | Perm |       |      | Perm |      |      | Perm |      | Perm |
| Protected Phases       |      |      |      |      | 6     |      |      | 8    |      |      | 4    |      |
| Permitted Phases       |      |      |      | 6    |       |      | 8    |      |      | 4    |      | 4    |
| Actuated Green, G (s)  |      |      |      |      | 17.0  |      |      | 67.0 |      |      | 67.0 | 67.0 |
| Effective Green, g (s) |      |      |      |      | 16.0  |      |      | 66.0 |      |      | 66.0 | 66.0 |
| Actuated g/C Ratio     |      |      |      |      | 0.18  |      |      | 0.73 |      |      | 0.73 | 0.73 |
| Clearance Time (s)     |      |      |      |      | 3.0   |      |      | 3.0  |      |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |      |      |      |      | 289   |      |      | 779  |      |      | 1277 | 1045 |
| v/s Ratio Prot         |      |      |      |      |       |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      |      |      | 0.20  |      |      | 0.77 |      |      | 0.46 | 0.16 |
| v/c Ratio              |      |      |      |      | 1.10  |      |      | 1.04 |      |      | 0.63 | 0.22 |
| Uniform Delay, d1      |      |      |      |      | 37.0  |      |      | 12.0 |      |      | 6.0  | 3.8  |
| Progression Factor     |      |      |      |      | 1.00  |      |      | 0.70 |      |      | 1.21 | 3.68 |
| Incremental Delay, d2  |      |      |      |      | 81.1  |      |      | 36.1 |      |      | 2.0  | 0.4  |
| Delay (s)              |      |      |      |      | 118.1 |      |      | 44.5 |      |      | 9.2  | 14.4 |
| Level of Service       |      |      |      |      | F     |      |      | D    |      |      | A    | B    |
| Approach Delay (s)     |      | 0.0  |      |      | 118.1 |      |      | 44.5 |      |      | 10.6 |      |
| Approach LOS           |      | A    |      |      | F     |      |      | D    |      |      | B    |      |

Intersection Summary

|                                   |        |                      |     |
|-----------------------------------|--------|----------------------|-----|
| HCM Average Control Delay         | 38.6   | HCM Level of Service | D   |
| HCM Volume to Capacity ratio      | 1.05   |                      |     |
| Actuated Cycle Length (s)         | 90.0   | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 115.1% | ICU Level of Service | H   |
| Analysis Period (min)             | 15     |                      |     |
| c Critical Lane Group             |        |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3426: L Street & 19th Street

6/1/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR                  |     |
|-----------------------------------|------|------|-------|------|------|------|------|------|------|------|-------|----------------------|-----|
| Lane Configurations               |      |      |       |      | ↑↑   |      |      |      |      |      | ↑↑↑   |                      |     |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900                 |     |
| Total Lost time (s)               |      |      |       |      | 4.0  |      |      |      |      |      | 4.0   |                      |     |
| Lane Util. Factor                 |      |      |       |      | 0.95 |      |      |      |      |      | 0.91  |                      |     |
| Fr <sub>t</sub>                   |      |      |       |      | 1.00 |      |      |      |      |      | 1.00  |                      |     |
| Fl <sub>t</sub> Protected         |      |      |       |      | 0.99 |      |      |      |      |      | 1.00  |                      |     |
| Satd. Flow (prot)                 |      |      |       |      | 3332 |      |      |      |      |      | 4916  |                      |     |
| Fl <sub>t</sub> Permitted         |      |      |       |      | 0.99 |      |      |      |      |      | 1.00  |                      |     |
| Satd. Flow (perm)                 |      |      |       |      | 3332 |      |      |      |      |      | 4916  |                      |     |
| Volume (vph)                      | 0    | 0    | 0     | 172  | 785  | 0    | 0    | 0    | 0    | 0    | 1191  | 0                    |     |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00                 |     |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 172  | 785  | 0    | 0    | 0    | 0    | 0    | 1191  | 0                    |     |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 0    | 8    | 0    | 0    | 0    | 0    | 0    | 0     | 0                    |     |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 0    | 949  | 0    | 0    | 0    | 0    | 0    | 1191  | 0                    |     |
| Parking (#/hr)                    |      | 0    | 0     | 0    | 0    |      |      |      |      | 0    | 0     | 0                    |     |
| Turn Type                         |      |      |       |      | Perm |      |      |      |      |      |       |                      |     |
| Protected Phases                  |      |      |       |      | 6    |      |      |      |      |      | 4     |                      |     |
| Permitted Phases                  |      |      |       |      | 6    |      |      |      |      |      |       |                      |     |
| Actuated Green, G (s)             |      |      |       |      | 30.0 |      |      |      |      |      | 24.0  |                      |     |
| Effective Green, g (s)            |      |      |       |      | 29.0 |      |      |      |      |      | 23.0  |                      |     |
| Actuated g/C Ratio                |      |      |       |      | 0.48 |      |      |      |      |      | 0.38  |                      |     |
| Clearance Time (s)                |      |      |       |      | 3.0  |      |      |      |      |      | 3.0   |                      |     |
| Lane Grp Cap (vph)                |      |      |       |      | 1610 |      |      |      |      |      | 1884  |                      |     |
| v/s Ratio Prot                    |      |      |       |      |      |      |      |      |      |      | c0.24 |                      |     |
| v/s Ratio Perm                    |      |      |       |      | 0.28 |      |      |      |      |      |       |                      |     |
| v/c Ratio                         |      |      |       |      | 0.59 |      |      |      |      |      | 0.63  |                      |     |
| Uniform Delay, d <sub>1</sub>     |      |      |       |      | 11.2 |      |      |      |      |      | 15.1  |                      |     |
| Progression Factor                |      |      |       |      | 0.40 |      |      |      |      |      | 0.76  |                      |     |
| Incremental Delay, d <sub>2</sub> |      |      |       |      | 1.2  |      |      |      |      |      | 1.4   |                      |     |
| Delay (s)                         |      |      |       |      | 5.6  |      |      |      |      |      | 12.8  |                      |     |
| Level of Service                  |      |      |       |      | A    |      |      |      |      |      | B     |                      |     |
| Approach Delay (s)                |      | 0.0  |       |      | 5.6  |      |      | 0.0  |      |      | 12.8  |                      |     |
| Approach LOS                      |      | A    |       |      | A    |      |      | A    |      |      | B     |                      |     |
| <b>Intersection Summary</b>       |      |      |       |      |      |      |      |      |      |      |       |                      |     |
| HCM Average Control Delay         |      |      | 9.6   |      |      |      |      |      |      |      |       | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      |      |      | 0.61  |      |      |      |      |      |      |      |       |                      |     |
| Actuated Cycle Length (s)         |      |      | 60.0  |      |      |      |      |      |      |      |       | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization |      |      | 56.4% |      |      |      |      |      |      |      |       | ICU Level of Service | B   |
| Analysis Period (min)             |      |      | 15    |      |      |      |      |      |      |      |       |                      |     |
| c Critical Lane Group             |      |      |       |      |      |      |      |      |      |      |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3427: L Street & 26th St

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      |      | ↕↕   |      |      | ↕    |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      |      | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor      |      |      |      |      | 0.95 |      |      | 1.00 |      |      | 1.00 |      |
| Frt                    |      |      |      |      | 0.99 |      |      | 1.00 |      |      | 0.95 |      |
| Flt Protected          |      |      |      |      | 1.00 |      |      | 0.98 |      |      | 1.00 |      |
| Satd. Flow (prot)      |      |      |      |      | 3331 |      |      | 1642 |      |      | 1600 |      |
| Flt Permitted          |      |      |      |      | 1.00 |      |      | 0.88 |      |      | 1.00 |      |
| Satd. Flow (perm)      |      |      |      |      | 3331 |      |      | 1480 |      |      | 1600 |      |
| Volume (vph)           | 0    | 0    | 0    | 14   | 759  | 47   | 39   | 53   | 0    | 0    | 66   | 34   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 14   | 759  | 47   | 39   | 53   | 0    | 0    | 66   | 34   |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 8    | 0    | 0    | 0    | 0    | 0    | 22   | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 813  | 0    | 0    | 92   | 0    | 0    | 78   | 0    |
| Parking (#/hr)         |      |      |      | 0    | 0    | 0    | 0    | 0    |      |      | 0    | 0    |
| Turn Type              |      |      |      |      | Perm |      |      | Perm |      |      |      |      |
| Protected Phases       |      |      |      |      | 8    |      |      | 2    |      |      | 6    |      |
| Permitted Phases       |      |      |      |      | 8    |      |      | 2    |      |      |      |      |
| Actuated Green, G (s)  |      |      |      |      | 31.0 |      |      | 23.0 |      |      | 23.0 |      |
| Effective Green, g (s) |      |      |      |      | 30.0 |      |      | 22.0 |      |      | 22.0 |      |
| Actuated g/C Ratio     |      |      |      |      | 0.50 |      |      | 0.37 |      |      | 0.37 |      |
| Clearance Time (s)     |      |      |      |      | 3.0  |      |      | 3.0  |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      |      |      |      | 1666 |      |      | 543  |      |      | 587  |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      | 0.05 |      |
| v/s Ratio Perm         |      |      |      |      | 0.24 |      |      | 0.06 |      |      |      |      |
| v/c Ratio              |      |      |      |      | 0.49 |      |      | 0.17 |      |      | 0.13 |      |
| Uniform Delay, d1      |      |      |      |      | 9.9  |      |      | 12.8 |      |      | 12.7 |      |
| Progression Factor     |      |      |      |      | 1.00 |      |      | 0.66 |      |      | 1.00 |      |
| Incremental Delay, d2  |      |      |      |      | 1.0  |      |      | 0.7  |      |      | 0.5  |      |
| Delay (s)              |      |      |      |      | 10.9 |      |      | 9.1  |      |      | 13.1 |      |
| Level of Service       |      |      |      |      | B    |      |      | A    |      |      | B    |      |
| Approach Delay (s)     |      | 0.0  |      |      | 10.9 |      |      | 9.1  |      |      | 13.1 |      |
| Approach LOS           |      | A    |      |      | B    |      |      | A    |      |      | B    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.0  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.35  |                      |     |
| Actuated Cycle Length (s)         | 60.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 41.2% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3428: J Street & 29th St off ramp

6/1/2005



| Movement               | EBT   | EBR  | SBL   | SBT   | SWL2  | SWL   |
|------------------------|-------|------|-------|-------|-------|-------|
| Lane Configurations    | ↑↑↑   |      |       | ↑↑↑   |       | ↑↑    |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900  | 1900  | 1900  | 1900  |
| Total Lost time (s)    | 4.0   |      |       | 4.0   |       | 4.0   |
| Lane Util. Factor      | 0.91  |      |       | 0.91  |       | 0.97  |
| Frt                    | 0.96  |      |       | 1.00  |       | 1.00  |
| Flt Protected          | 1.00  |      |       | 0.99  |       | 0.95  |
| Satd. Flow (prot)      | 4696  |      |       | 4874  |       | 3433  |
| Flt Permitted          | 1.00  |      |       | 0.99  |       | 0.95  |
| Satd. Flow (perm)      | 4696  |      |       | 4874  |       | 3433  |
| Volume (vph)           | 1427  | 604  | 83    | 403   | 105   | 421   |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)        | 1427  | 604  | 83    | 403   | 105   | 421   |
| RTOR Reduction (vph)   | 27    | 0    | 0     | 0     | 0     | 25    |
| Lane Group Flow (vph)  | 2004  | 0    | 0     | 486   | 0     | 501   |
| Parking (#/hr)         | 0     | 0    |       | 0     |       |       |
| Turn Type              |       |      | Split |       | Split |       |
| Protected Phases       | 2     |      | 8     | 8     | 4     | 4     |
| Permitted Phases       |       |      |       |       |       |       |
| Actuated Green, G (s)  | 46.0  |      |       | 17.0  |       | 18.0  |
| Effective Green, g (s) | 45.0  |      |       | 16.0  |       | 17.0  |
| Actuated g/C Ratio     | 0.50  |      |       | 0.18  |       | 0.19  |
| Clearance Time (s)     | 3.0   |      |       | 3.0   |       | 3.0   |
| Lane Grp Cap (vph)     | 2348  |      |       | 866   |       | 648   |
| v/s Ratio Prot         | c0.43 |      |       | c0.10 |       | c0.15 |
| v/s Ratio Perm         |       |      |       |       |       |       |
| v/c Ratio              | 0.85  |      |       | 0.56  |       | 0.77  |
| Uniform Delay, d1      | 19.6  |      |       | 33.8  |       | 34.7  |
| Progression Factor     | 0.37  |      |       | 1.00  |       | 1.00  |
| Incremental Delay, d2  | 2.6   |      |       | 2.6   |       | 8.7   |
| Delay (s)              | 10.0  |      |       | 36.4  |       | 43.4  |
| Level of Service       | A     |      |       | D     |       | D     |
| Approach Delay (s)     | 10.0  |      |       | 36.4  |       | 43.4  |
| Approach LOS           | A     |      |       | D     |       | D     |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 20.0  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.78  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 75.6% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis

3429: J Street & Alhambra

6/1/2005



| Movement               | EBL   | EBT   | EBR  | WBL   | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|-------|-------|------|-------|------|------|------|------|------|------|-------|------|
| Lane Configurations    | ↖     | ↖↗    |      | ↖     | ↖↗   | ↖    |      | ↖↗   |      |      | ↖↗    |      |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0   | 4.0   |      | 4.0   | 4.0  | 4.0  |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor      | 1.00  | 0.95  |      | 0.95  | 0.95 | 1.00 |      | 0.95 |      |      | 0.95  |      |
| Frt                    | 1.00  | 0.97  |      | 1.00  | 1.00 | 0.85 |      | 0.94 |      |      | 1.00  |      |
| Flt Protected          | 0.95  | 1.00  |      | 0.95  | 0.95 | 1.00 |      | 1.00 |      |      | 0.99  |      |
| Satd. Flow (prot)      | 1770  | 3259  |      | 1681  | 1681 | 1425 |      | 3172 |      |      | 3343  |      |
| Flt Permitted          | 0.95  | 1.00  |      | 0.95  | 0.95 | 1.00 |      | 1.00 |      |      | 0.77  |      |
| Satd. Flow (perm)      | 1770  | 3259  |      | 1681  | 1681 | 1425 |      | 3172 |      |      | 2586  |      |
| Volume (vph)           | 160   | 942   | 243  | 607   | 0    | 324  | 0    | 285  | 172  | 50   | 380   | 0    |
| Peak-hour factor, PHF  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 160   | 942   | 243  | 607   | 0    | 324  | 0    | 285  | 172  | 50   | 380   | 0    |
| RTOR Reduction (vph)   | 0     | 25    | 0    | 0     | 0    | 248  | 0    | 99   | 0    | 0    | 0     | 0    |
| Lane Group Flow (vph)  | 160   | 1160  | 0    | 304   | 303  | 76   | 0    | 358  | 0    | 0    | 430   | 0    |
| Parking (#/hr)         |       | 0     | 0    |       |      | 0    |      | 0    | 0    |      | 0     |      |
| Turn Type              | Split |       |      | Split |      |      | Perm |      |      |      | Perm  |      |
| Protected Phases       | 2     | 2     |      | 6     | 6    |      | 8    |      |      |      | 4     |      |
| Permitted Phases       |       |       |      |       |      |      | 6    |      |      |      | 4     |      |
| Actuated Green, G (s)  | 39.0  | 39.0  |      | 22.0  | 22.0 | 22.0 | 20.0 |      |      |      | 20.0  |      |
| Effective Green, g (s) | 38.0  | 38.0  |      | 21.0  | 21.0 | 21.0 | 19.0 |      |      |      | 19.0  |      |
| Actuated g/C Ratio     | 0.42  | 0.42  |      | 0.23  | 0.23 | 0.23 | 0.21 |      |      |      | 0.21  |      |
| Clearance Time (s)     | 3.0   | 3.0   |      | 3.0   | 3.0  | 3.0  | 3.0  |      |      |      | 3.0   |      |
| Lane Grp Cap (vph)     | 747   | 1376  |      | 392   | 392  | 333  | 670  |      |      |      | 546   |      |
| v/s Ratio Prot         | 0.09  | c0.36 |      | c0.18 | 0.18 |      | 0.11 |      |      |      |       |      |
| v/s Ratio Perm         |       |       |      |       |      |      | 0.05 |      |      |      | c0.17 |      |
| v/c Ratio              | 0.21  | 0.84  |      | 0.78  | 0.77 | 0.23 | 0.53 |      |      |      | 0.79  |      |
| Uniform Delay, d1      | 16.5  | 23.3  |      | 32.3  | 32.3 | 27.9 | 31.6 |      |      |      | 33.6  |      |
| Progression Factor     | 0.48  | 0.46  |      | 1.00  | 1.00 | 1.00 | 0.53 |      |      |      | 1.00  |      |
| Incremental Delay, d2  | 0.6   | 6.0   |      | 13.9  | 13.8 | 1.6  | 2.8  |      |      |      | 11.0  |      |
| Delay (s)              | 8.5   | 16.7  |      | 46.2  | 46.0 | 29.5 | 19.6 |      |      |      | 44.6  |      |
| Level of Service       | A     | B     |      | D     | D    | C    | B    |      |      |      | D     |      |
| Approach Delay (s)     | 15.7  |       |      | 40.4  |      |      | 19.6 |      |      |      | 44.6  |      |
| Approach LOS           | B     |       |      | D     |      |      | B    |      |      |      | D     |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 27.5  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.81  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 89.3% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
3435: N Street & 29th Street

6/1/2005



| Movement               | EBT   | EBR  | EBR2 | WBL2  | WBL   | WBT  | SBL2 | SBL   | SBT  | SBR  |
|------------------------|-------|------|------|-------|-------|------|------|-------|------|------|
| Lane Configurations    | ↑     | ↔    |      |       | ↔     | ↑    |      | ↔     | ↑↔   |      |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900  | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    | 4.0   | 4.0  |      |       | 4.0   | 4.0  |      | 4.0   | 4.0  |      |
| Lane Util. Factor      | 1.00  | 1.00 |      |       | 0.95  | 0.95 |      | 0.97  | 0.95 |      |
| Frt                    | 1.00  | 0.85 |      |       | 1.00  | 1.00 |      | 1.00  | 1.00 |      |
| Flt Protected          | 1.00  | 1.00 |      |       | 0.95  | 1.00 |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)      | 1676  | 1425 |      |       | 1681  | 1768 |      | 3433  | 3362 |      |
| Flt Permitted          | 1.00  | 1.00 |      |       | 0.95  | 1.00 |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)      | 1676  | 1425 |      |       | 1681  | 1768 |      | 3433  | 3362 |      |
| Volume (vph)           | 508   | 257  | 143  | 132   | 167   | 299  | 161  | 994   | 834  | 1    |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 508   | 257  | 143  | 132   | 167   | 299  | 161  | 994   | 834  | 1    |
| RTOR Reduction (vph)   | 0     | 22   | 0    | 0     | 0     | 0    | 0    | 0     | 0    | 0    |
| Lane Group Flow (vph)  | 508   | 378  | 0    | 0     | 292   | 306  | 0    | 1155  | 835  | 0    |
| Parking (#/hr)         | 0     | 0    | 0    |       |       |      |      |       | 0    |      |
| Turn Type              |       | Perm |      | Split | Split |      | Perm | Perm  |      |      |
| Protected Phases       | 4     |      |      | 8     | 8     | 8    |      |       | 6    |      |
| Permitted Phases       |       | 4    |      |       |       |      | 6    | 6     |      |      |
| Actuated Green, G (s)  | 30.0  | 30.0 |      |       | 18.0  | 18.0 |      | 33.0  | 33.0 |      |
| Effective Green, g (s) | 29.0  | 29.0 |      |       | 17.0  | 17.0 |      | 32.0  | 32.0 |      |
| Actuated g/C Ratio     | 0.32  | 0.32 |      |       | 0.19  | 0.19 |      | 0.36  | 0.36 |      |
| Clearance Time (s)     | 3.0   | 3.0  |      |       | 3.0   | 3.0  |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     | 540   | 459  |      |       | 318   | 334  |      | 1221  | 1195 |      |
| v/s Ratio Prot         | c0.30 |      |      |       | c0.17 | 0.17 |      |       | 0.25 |      |
| v/s Ratio Perm         |       | 0.27 |      |       |       |      |      | c0.34 |      |      |
| v/c Ratio              | 0.94  | 0.82 |      |       | 0.92  | 0.92 |      | 0.95  | 0.70 |      |
| Uniform Delay, d1      | 29.7  | 28.1 |      |       | 35.8  | 35.8 |      | 28.2  | 24.9 |      |
| Progression Factor     | 0.69  | 0.65 |      |       | 1.01  | 1.12 |      | 1.08  | 1.07 |      |
| Incremental Delay, d2  | 20.0  | 10.6 |      |       | 29.9  | 26.9 |      | 10.6  | 2.0  |      |
| Delay (s)              | 40.5  | 28.8 |      |       | 66.1  | 66.9 |      | 41.0  | 28.7 |      |
| Level of Service       | D     | C    |      |       | E     | E    |      | D     | C    |      |
| Approach Delay (s)     | 35.4  |      |      |       |       | 66.5 |      |       | 35.9 |      |
| Approach LOS           | D     |      |      |       |       | E    |      |       | D    |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 41.0  | HCM Level of Service | D    |
| HCM Volume to Capacity ratio      | 0.94  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 85.8% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3436: Capitol & Alhambra

6/1/2005

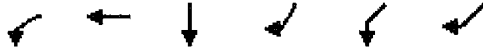


| Movement               | EBL   | EBT  | EBR   | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL   | SBT  | SBR  |
|------------------------|-------|------|-------|------|------|------|------|------|------|-------|------|------|
| Lane Configurations    |       | ↕↕   |       |      | ↕↕   |      | ↖    | ↗    | ↖    | ↖     | ↗    | ↖    |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    |       | 4.0  |       |      | 4.0  |      | 4.0  | 4.0  | 4.0  | 4.0   | 4.0  | 4.0  |
| Lane Util. Factor      |       | 0.95 |       |      | 0.95 |      | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Fr't                   |       | 0.99 |       |      | 0.97 |      | 1.00 | 1.00 | 0.85 | 1.00  | 1.00 | 0.85 |
| Flt Protected          |       | 0.99 |       |      | 1.00 |      | 0.95 | 1.00 | 1.00 | 0.95  | 1.00 | 1.00 |
| Satd. Flow (prot)      |       | 3307 |       |      | 3237 |      | 1593 | 1676 | 1425 | 1593  | 1676 | 1425 |
| Flt Permitted          |       | 0.99 |       |      | 1.00 |      | 0.33 | 1.00 | 1.00 | 0.27  | 1.00 | 1.00 |
| Satd. Flow (perm)      |       | 3307 |       |      | 3237 |      | 556  | 1676 | 1425 | 447   | 1676 | 1425 |
| Volume (vph)           | 83    | 410  | 30    | 49   | 611  | 198  | 54   | 545  | 81   | 213   | 472  | 83   |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 83    | 410  | 30    | 49   | 611  | 198  | 54   | 545  | 81   | 213   | 472  | 83   |
| RTOR Reduction (vph)   | 0     | 5    | 0     | 0    | 31   | 0    | 0    | 0    | 30   | 0     | 0    | 35   |
| Lane Group Flow (vph)  | 0     | 518  | 0     | 0    | 827  | 0    | 54   | 545  | 51   | 213   | 472  | 48   |
| Parking (#/hr)         | 0     | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    |
| Turn Type              | Split |      | Split |      |      |      | Perm |      | Perm | Perm  | Perm |      |
| Protected Phases       | 4     | 4    | 8     |      | 8    |      |      | 2    |      |       | 6    |      |
| Permitted Phases       |       |      |       |      |      |      | 2    |      | 2    | 6     | 6    |      |
| Actuated Green, G (s)  | 17.0  |      | 22.0  |      |      |      | 42.0 |      | 42.0 | 42.0  | 42.0 |      |
| Effective Green, g (s) | 16.0  |      | 21.0  |      |      |      | 41.0 |      | 41.0 | 41.0  | 41.0 |      |
| Actuated g/C Ratio     | 0.18  |      | 0.23  |      |      |      | 0.46 |      | 0.46 | 0.46  | 0.46 |      |
| Clearance Time (s)     | 3.0   |      | 3.0   |      |      |      | 3.0  |      | 3.0  | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     | 588   |      | 755   |      |      |      | 253  |      | 764  | 649   | 204  |      |
| v/s Ratio Prot         | c0.16 |      | c0.26 |      |      |      |      |      | 0.33 |       | 0.28 |      |
| v/s Ratio Perm         |       |      |       |      |      |      | 0.10 |      | 0.04 | c0.48 | 0.03 |      |
| v/c Ratio              | 0.88  |      | 1.09  |      |      |      | 0.21 |      | 0.71 | 0.08  | 1.04 |      |
| Uniform Delay, d1      | 36.1  |      | 34.5  |      |      |      | 14.8 |      | 19.8 | 13.8  | 24.5 |      |
| Progression Factor     | 0.64  |      | 1.00  |      |      |      | 0.42 |      | 0.41 | 0.10  | 1.00 |      |
| Incremental Delay, d2  | 16.8  |      | 61.7  |      |      |      | 0.9  |      | 2.7  | 0.1   | 66.2 |      |
| Delay (s)              | 39.9  |      | 96.2  |      |      |      | 7.2  |      | 10.9 | 1.4   | 90.7 |      |
| Level of Service       | D     |      | F     |      |      |      | A    |      | B    | A     | F    |      |
| Approach Delay (s)     | 39.9  |      | 96.2  |      |      |      |      |      | 9.5  |       | 38.6 |      |
| Approach LOS           | D     |      | F     |      |      |      |      |      | A    |       | D    |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 49.3  | HCM Level of Service | D    |
| HCM Volume to Capacity ratio      | 1.03  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 93.2% | ICU Level of Service | F    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3437: P Street & 29th St off ramp

6/1/2005



| Movement               | WBL  | WBT   | SBT   | SBR  | SWL   | SWR  |
|------------------------|------|-------|-------|------|-------|------|
| Lane Configurations    | ↵    | ↑↑    | ↑↑↑   |      | ↵↵    | ↵    |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900  | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0  | 4.0   | 4.0   |      | 4.0   | 4.0  |
| Lane Util. Factor      | 1.00 | 0.95  | 0.91  |      | 0.97  | 0.91 |
| Frt                    | 1.00 | 1.00  | 0.98  |      | 0.99  | 0.85 |
| Flt Protected          | 0.95 | 1.00  | 1.00  |      | 0.95  | 1.00 |
| Satd. Flow (prot)      | 1593 | 3362  | 4814  |      | 3424  | 1441 |
| Flt Permitted          | 0.95 | 1.00  | 1.00  |      | 0.95  | 1.00 |
| Satd. Flow (perm)      | 1593 | 3362  | 4814  |      | 3424  | 1441 |
| Volume (vph)           | 151  | 828   | 922   | 147  | 351   | 173  |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 151  | 828   | 922   | 147  | 351   | 173  |
| RTOR Reduction (vph)   | 39   | 0     | 24    | 0    | 0     | 0    |
| Lane Group Flow (vph)  | 112  | 828   | 1045  | 0    | 369   | 155  |
| Parking (#/hr)         | 0    | 0     | 0     | 0    |       |      |
| Turn Type              | Perm |       |       |      |       | Perm |
| Protected Phases       |      | 6     | 7     |      | 8     |      |
| Permitted Phases       | 6    |       |       |      |       | 8    |
| Actuated Green, G (s)  | 33.0 | 33.0  | 28.0  |      | 20.0  | 20.0 |
| Effective Green, g (s) | 32.0 | 32.0  | 27.0  |      | 19.0  | 19.0 |
| Actuated g/C Ratio     | 0.36 | 0.36  | 0.30  |      | 0.21  | 0.21 |
| Clearance Time (s)     | 3.0  | 3.0   | 3.0   |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)     | 566  | 1195  | 1444  |      | 723   | 304  |
| v/s Ratio Prot         |      | c0.25 | c0.22 |      | c0.11 |      |
| v/s Ratio Perm         | 0.07 |       |       |      |       | 0.11 |
| v/c Ratio              | 0.20 | 0.69  | 0.72  |      | 0.51  | 0.51 |
| Uniform Delay, d1      | 20.1 | 24.8  | 28.2  |      | 31.4  | 31.4 |
| Progression Factor     | 0.28 | 0.41  | 0.71  |      | 1.00  | 1.00 |
| Incremental Delay, d2  | 0.6  | 2.5   | 2.1   |      | 2.6   | 6.0  |
| Delay (s)              | 6.3  | 12.6  | 22.1  |      | 34.0  | 37.4 |
| Level of Service       | A    | B     | C     |      | C     | D    |
| Approach Delay (s)     |      | 11.6  | 22.1  |      | 35.0  |      |
| Approach LOS           |      | B     | C     |      | C     |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 20.7  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.66  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 65.8% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |



HCM Signalized Intersection Capacity Analysis  
 3438: P Street & Alhambra

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL   | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|-------|------|-------|------|------|
| Lane Configurations    |      |      |      |      | ↕↕↕  |      | ↗    | ↖     |      | ↗     | ↖    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      | 4.0  | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor      |      |      |      |      | 0.91 |      | 1.00 | 1.00  |      | 1.00  | 1.00 |      |
| Frt                    |      |      |      |      | 0.98 |      | 1.00 | 0.94  |      | 1.00  | 0.97 |      |
| Flt Protected          |      |      |      |      | 1.00 |      | 0.95 | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)      |      |      |      |      | 4956 |      | 1770 | 1743  |      | 1770  | 1815 |      |
| Flt Permitted          |      |      |      |      | 1.00 |      | 0.95 | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)      |      |      |      |      | 4956 |      | 1770 | 1743  |      | 1770  | 1815 |      |
| Volume (vph)           | 0    | 0    | 0    | 73   | 972  | 185  | 124  | 392   | 293  | 339   | 409  | 85   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 73   | 972  | 185  | 124  | 392   | 293  | 339   | 409  | 85   |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 28   | 0    | 0    | 30    | 0    | 0     | 8    | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 1202 | 0    | 124  | 655   | 0    | 339   | 486  | 0    |
| Turn Type              |      |      |      | Perm |      |      | Prot |       |      | Prot  |      |      |
| Protected Phases       |      |      |      |      | 6    |      | 3    | 8     |      | 7     | 4    |      |
| Permitted Phases       |      |      |      | 6    |      |      |      |       |      |       |      |      |
| Actuated Green, G (s)  |      |      |      |      | 24.0 |      | 13.0 | 37.0  |      | 20.0  | 44.0 |      |
| Effective Green, g (s) |      |      |      |      | 23.0 |      | 12.0 | 36.0  |      | 19.0  | 43.0 |      |
| Actuated g/C Ratio     |      |      |      |      | 0.26 |      | 0.13 | 0.40  |      | 0.21  | 0.48 |      |
| Clearance Time (s)     |      |      |      |      | 3.0  |      | 3.0  | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     |      |      |      |      | 1267 |      | 236  | 697   |      | 374   | 867  |      |
| v/s Ratio Prot         |      |      |      |      |      |      | 0.07 | c0.38 |      | c0.19 | 0.27 |      |
| v/s Ratio Perm         |      |      |      |      | 0.24 |      |      |       |      |       |      |      |
| v/c Ratio              |      |      |      |      | 0.95 |      | 0.53 | 0.94  |      | 0.91  | 0.56 |      |
| Uniform Delay, d1      |      |      |      |      | 32.9 |      | 36.3 | 26.0  |      | 34.6  | 16.8 |      |
| Progression Factor     |      |      |      |      | 1.00 |      | 1.00 | 1.00  |      | 1.12  | 0.77 |      |
| Incremental Delay, d2  |      |      |      |      | 15.7 |      | 8.1  | 22.2  |      | 16.1  | 1.3  |      |
| Delay (s)              |      |      |      |      | 48.6 |      | 44.5 | 48.1  |      | 54.9  | 14.2 |      |
| Level of Service       |      |      |      |      | D    |      | D    | D     |      | D     | B    |      |
| Approach Delay (s)     |      | 0.0  |      |      | 48.6 |      |      | 47.6  |      |       | 30.8 |      |
| Approach LOS           |      | A    |      |      | D    |      |      | D     |      |       | C    |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 43.1  | HCM Level of Service | D    |
| HCM Volume to Capacity ratio      | 0.93  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 91.7% | ICU Level of Service | F    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

3444: Q Street & 29th Street

6/1/2005



| Movement                          | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|-------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations               |      | ↑↑    |      |      |      |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0   |      |      |      |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor                 |      | 0.95  |      |      |      |      |      |      |      |      | 0.91 |      |
| Fr <sub>t</sub>                   |      | 0.94  |      |      |      |      |      |      |      |      | 1.00 |      |
| Fl <sub>t</sub> Protected         |      | 1.00  |      |      |      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (prot)                 |      | 3333  |      |      |      |      |      |      |      |      | 5054 |      |
| Fl <sub>t</sub> Permitted         |      | 1.00  |      |      |      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (perm)                 |      | 3333  |      |      |      |      |      |      |      |      | 5054 |      |
| Volume (vph)                      | 0    | 574   | 364  | 0    | 0    | 0    | 0    | 0    | 0    | 177  | 1272 | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 574   | 364  | 0    | 0    | 0    | 0    | 0    | 0    | 177  | 1272 | 0    |
| RTOR Reduction (vph)              | 0    | 12    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 20   | 0    |
| Lane Group Flow (vph)             | 0    | 926   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1429 | 0    |
| Turn Type                         |      |       |      |      |      |      |      |      |      | Perm |      |      |
| Protected Phases                  |      | 2     |      |      |      |      |      |      |      |      |      | 4    |
| Permitted Phases                  |      |       |      |      |      |      |      |      |      | 4    |      |      |
| Actuated Green, G (s)             |      | 43.0  |      |      |      |      |      |      |      |      | 41.0 |      |
| Effective Green, g (s)            |      | 42.0  |      |      |      |      |      |      |      |      | 40.0 |      |
| Actuated g/C Ratio                |      | 0.47  |      |      |      |      |      |      |      |      | 0.44 |      |
| Clearance Time (s)                |      | 3.0   |      |      |      |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |      | 1555  |      |      |      |      |      |      |      |      | 2246 |      |
| v/s Ratio Prot                    |      | c0.28 |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm                    |      |       |      |      |      |      |      |      |      |      | 0.28 |      |
| v/c Ratio                         |      | 0.60  |      |      |      |      |      |      |      |      | 0.64 |      |
| Uniform Delay, d <sub>1</sub>     |      | 17.7  |      |      |      |      |      |      |      |      | 19.4 |      |
| Progression Factor                |      | 1.00  |      |      |      |      |      |      |      |      | 0.31 |      |
| Incremental Delay, d <sub>2</sub> |      | 1.7   |      |      |      |      |      |      |      |      | 1.1  |      |
| Delay (s)                         |      | 19.4  |      |      |      |      |      |      |      |      | 7.0  |      |
| Level of Service                  |      | B     |      |      |      |      |      |      |      |      | A    |      |
| Approach Delay (s)                |      | 19.4  |      |      | 0.0  |      |      | 0.0  |      |      | 7.0  |      |
| Approach LOS                      |      | B     |      |      | A    |      |      | A    |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.9  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.62  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 62.4% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 3467: N Street & Alhambra

6/1/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|-------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations    |      | ↕     |      |      | ↕    |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      | 4.0  |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00  |      |      | 1.00 |      |      | 1.00  |      |      | 1.00 |      |
| Frt                    |      | 0.94  |      |      | 0.99 |      |      | 0.99  |      |      | 0.98 |      |
| Flt Protected          |      | 0.99  |      |      | 0.99 |      |      | 1.00  |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 1564  |      |      | 1642 |      |      | 1654  |      |      | 1646 |      |
| Flt Permitted          |      | 0.87  |      |      | 0.84 |      |      | 0.98  |      |      | 0.99 |      |
| Satd. Flow (perm)      |      | 1375  |      |      | 1386 |      |      | 1615  |      |      | 1633 |      |
| Volume (vph)           | 131  | 258   | 297  | 54   | 221  | 26   | 21   | 508   | 51   | 9    | 490  | 73   |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 131  | 258   | 297  | 54   | 221  | 26   | 21   | 508   | 51   | 9    | 490  | 73   |
| RTOR Reduction (vph)   | 0    | 30    | 0    | 0    | 4    | 0    | 0    | 4     | 0    | 0    | 6    | 0    |
| Lane Group Flow (vph)  | 0    | 656   |      | 0    | 0    | 297  | 0    | 0     | 576  | 0    | 0    | 566  |
| Parking (#/hr)         | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |       |      | Perm |      |      | Perm |       |      | Perm |      |      |
| Protected Phases       |      | 4     |      |      | 8    |      |      | 2     |      |      | 6    |      |
| Permitted Phases       | 4    |       |      | 8    |      |      | 2    |       |      | 6    |      |      |
| Actuated Green, G (s)  |      | 47.0  |      |      | 47.0 |      |      | 37.0  |      |      | 37.0 |      |
| Effective Green, g (s) |      | 46.0  |      |      | 46.0 |      |      | 36.0  |      |      | 36.0 |      |
| Actuated g/C Ratio     |      | 0.51  |      |      | 0.51 |      |      | 0.40  |      |      | 0.40 |      |
| Clearance Time (s)     |      | 3.0   |      |      | 3.0  |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 703   |      |      | 708  |      |      | 646   |      |      | 653  |      |
| v/s Ratio Prot         |      |       |      |      |      |      |      |       |      |      |      |      |
| v/s Ratio Perm         |      | c0.48 |      |      | 0.21 |      |      | c0.36 |      |      | 0.35 |      |
| v/c Ratio              |      | 0.93  |      |      | 0.42 |      |      | 0.89  |      |      | 0.87 |      |
| Uniform Delay, d1      |      | 20.6  |      |      | 13.7 |      |      | 25.2  |      |      | 24.8 |      |
| Progression Factor     |      | 0.27  |      |      | 1.00 |      |      | 0.69  |      |      | 0.74 |      |
| Incremental Delay, d2  |      | 15.6  |      |      | 1.8  |      |      | 6.9   |      |      | 11.4 |      |
| Delay (s)              |      | 21.1  |      |      | 15.5 |      |      | 24.3  |      |      | 29.7 |      |
| Level of Service       |      | C     |      |      | B    |      |      | C     |      |      | C    |      |
| Approach Delay (s)     |      | 21.1  |      |      | 15.5 |      |      | 24.3  |      |      | 29.7 |      |
| Approach LOS           |      | C     |      |      | B    |      |      | C     |      |      | C    |      |

| Intersection Summary              |        |                      |     |
|-----------------------------------|--------|----------------------|-----|
| HCM Average Control Delay         | 23.5   | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 0.92   |                      |     |
| Actuated Cycle Length (s)         | 90.0   | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 101.7% | ICU Level of Service | G   |
| Analysis Period (min)             | 15     |                      |     |
| c Critical Lane Group             |        |                      |     |

HCM Signalized Intersection Capacity Analysis  
5802: K Street & 29th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑    | ↗    | ↖    | ↑     |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  | 4.0  | 4.0   |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00 | 1.00 | 1.00 | 1.00  |      |      |      |      |      | 0.91 |      |
| Frt                    |      | 1.00 | 0.85 | 1.00 | 1.00  |      |      |      |      |      | 0.98 |      |
| Flt Protected          |      | 1.00 | 1.00 | 0.95 | 1.00  |      |      |      |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 1863 | 1583 | 1770 | 1863  |      |      |      |      |      | 4960 |      |
| Flt Permitted          |      | 1.00 | 1.00 | 0.48 | 1.00  |      |      |      |      |      | 1.00 |      |
| Satd. Flow (perm)      |      | 1863 | 1583 | 888  | 1863  |      |      |      |      |      | 4960 |      |
| Volume (vph)           | 0    | 334  | 282  | 205  | 539   | 0    | 0    | 0    | 0    | 149  | 1149 | 198  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 334  | 282  | 205  | 539   | 0    | 0    | 0    | 0    | 149  | 1149 | 198  |
| RTOR Reduction (vph)   | 0    | 0    | 14   | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 23   | 0    |
| Lane Group Flow (vph)  | 0    | 334  | 268  | 205  | 539   | 0    | 0    | 0    | 0    | 0    | 1473 | 0    |
| Turn Type              |      |      | Perm | Perm |       |      |      |      |      |      | Perm |      |
| Protected Phases       |      | 4    |      |      | 8     |      |      |      |      |      |      | 6    |
| Permitted Phases       |      |      | 4    | 8    |       |      |      |      |      | 6    |      |      |
| Actuated Green, G (s)  |      | 45.0 | 45.0 | 45.0 | 45.0  |      |      |      |      |      | 39.0 |      |
| Effective Green, g (s) |      | 44.0 | 44.0 | 44.0 | 44.0  |      |      |      |      |      | 38.0 |      |
| Actuated g/C Ratio     |      | 0.49 | 0.49 | 0.49 | 0.49  |      |      |      |      |      | 0.42 |      |
| Clearance Time (s)     |      | 3.0  | 3.0  | 3.0  | 3.0   |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 911  | 774  | 434  | 911   |      |      |      |      |      | 2094 |      |
| v/s Ratio Prot         |      | 0.18 |      |      | c0.29 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      | 0.17 | 0.23 |       |      |      |      |      |      | 0.30 |      |
| v/c Ratio              |      | 0.37 | 0.35 | 0.47 | 0.59  |      |      |      |      |      | 0.70 |      |
| Uniform Delay, d1      |      | 14.3 | 14.2 | 15.3 | 16.5  |      |      |      |      |      | 21.4 |      |
| Progression Factor     |      | 0.64 | 0.60 | 0.46 | 0.45  |      |      |      |      |      | 0.83 |      |
| Incremental Delay, d2  |      | 1.0  | 1.1  | 3.0  | 2.3   |      |      |      |      |      | 1.4  |      |
| Delay (s)              |      | 10.3 | 9.6  | 10.0 | 9.8   |      |      |      |      |      | 19.2 |      |
| Level of Service       |      | B    | A    | B    | A     |      |      |      |      |      | B    |      |
| Approach Delay (s)     |      | 9.9  |      |      | 9.8   |      |      | 0.0  |      |      | 19.2 |      |
| Approach LOS           |      | A    |      |      | A     |      |      | A    |      |      | B    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 14.8  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.64  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 68.6% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
5848: J Street & 30th Street

6/1/2005



| Movement                  | EBL2 | EBL  | EBT  | WBR2 | NBL  | NBT  | NBR  |
|---------------------------|------|------|------|------|------|------|------|
| Lane Configurations       |      | ↘    | ↕↕↕  | ↗    | ↘    | ↕↕   |      |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |      | 4.0  | 4.0  |      | 4.0  | 4.0  |      |
| Lane Util. Factor         |      | 0.86 | 0.86 |      | 0.91 | 0.91 |      |
| Fr <sub>t</sub>           |      | 1.00 | 1.00 |      | 1.00 | 0.96 |      |
| Fl <sub>t</sub> Protected |      | 0.95 | 1.00 |      | 0.95 | 0.99 |      |
| Satd. Flow (prot)         |      | 1522 | 4627 |      | 1610 | 3221 |      |
| Fl <sub>t</sub> Permitted |      | 0.95 | 1.00 |      | 0.95 | 0.99 |      |
| Satd. Flow (perm)         |      | 1522 | 4627 |      | 1610 | 3221 |      |
| Volume (vph)              | 245  | 255  | 1056 | 0    | 377  | 322  | 163  |
| Peak-hour factor, PHF     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 245  | 255  | 1056 | 0    | 377  | 322  | 163  |
| RTOR Reduction (vph)      | 0    | 60   | 0    | 0    | 0    | 35   | 0    |
| Lane Group Flow (vph)     | 0    | 347  | 1149 | 0    | 282  | 545  | 0    |
| Parking (#/hr)            |      |      | 0    | 0    |      |      | 0    |
| Turn Type                 | Perm | Perm |      | Free | Perm |      |      |
| Protected Phases          |      |      | 2    |      |      | 8    |      |
| Permitted Phases          | 2    | 2    |      | Free | 8    |      |      |
| Actuated Green, G (s)     |      | 45.0 | 45.0 |      | 39.0 | 39.0 |      |
| Effective Green, g (s)    |      | 44.0 | 44.0 |      | 38.0 | 38.0 |      |
| Actuated g/C Ratio        |      | 0.49 | 0.49 |      | 0.42 | 0.42 |      |
| Clearance Time (s)        |      | 3.0  | 3.0  |      | 3.0  | 3.0  |      |
| Lane Grp Cap (vph)        |      | 744  | 2262 |      | 680  | 1360 |      |
| v/s Ratio Prot            |      |      |      |      |      |      |      |
| v/s Ratio Perm            |      | 0.23 | 0.25 |      | 0.18 | 0.17 |      |
| v/c Ratio                 |      | 0.47 | 0.51 |      | 0.41 | 0.40 |      |
| Uniform Delay, d1         |      | 15.2 | 15.6 |      | 18.2 | 18.1 |      |
| Progression Factor        |      | 0.07 | 0.26 |      | 0.21 | 0.15 |      |
| Incremental Delay, d2     |      | 1.1  | 0.4  |      | 1.6  | 0.7  |      |
| Delay (s)                 |      | 2.1  | 4.4  |      | 5.4  | 3.4  |      |
| Level of Service          |      | A    | A    |      | A    | A    |      |
| Approach Delay (s)        |      |      | 3.8  |      |      | 4.1  |      |
| Approach LOS              |      |      | A    |      |      | A    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 3.9   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.46  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 46.3% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 5849: L Street & 30th Street

6/1/2005



| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|---------------------------|------|------|------|------|-------|------|------|-------|------|------|------|------|
| Lane Configurations       |      |      |      |      | ↑↑↑   |      | ↗    | ↖↑↑   |      |      |      |      |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |      |      |      |      | 4.0   |      | 4.0  | 4.0   |      |      |      |      |
| Lane Util. Factor         |      |      |      |      | 0.91  |      | 0.86 | 0.86  |      |      |      |      |
| Fr <sub>t</sub>           |      |      |      |      | 0.97  |      | 1.00 | 1.00  |      |      |      |      |
| Fl <sub>t</sub> Protected |      |      |      |      | 1.00  |      | 0.95 | 1.00  |      |      |      |      |
| Satd. Flow (prot)         |      |      |      |      | 4914  |      | 1522 | 4646  |      |      |      |      |
| Fl <sub>t</sub> Permitted |      |      |      |      | 1.00  |      | 0.95 | 1.00  |      |      |      |      |
| Satd. Flow (perm)         |      |      |      |      | 4914  |      | 1522 | 4646  |      |      |      |      |
| Volume (vph)              | 0    | 0    | 0    | 0    | 455   | 132  | 179  | 1185  | 0    | 0    | 0    | 0    |
| Peak-hour factor, PHF     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 0    | 0    | 0    | 0    | 455   | 132  | 179  | 1185  | 0    | 0    | 0    | 0    |
| RTOR Reduction (vph)      | 0    | 0    | 0    | 0    | 32    | 0    | 86   | 0     | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)     | 0    | 0    | 0    | 0    | 555   | 0    | 93   | 1185  | 0    | 0    | 0    | 0    |
| Parking (#/hr)            |      |      |      |      |       | 0    |      | 0     |      |      |      |      |
| Turn Type                 |      |      |      |      |       |      | Perm |       |      |      |      |      |
| Protected Phases          |      |      |      |      | 6     |      |      | 8     |      |      |      |      |
| Permitted Phases          |      |      |      |      |       |      | 8    |       |      |      |      |      |
| Actuated Green, G (s)     |      |      |      |      | 36.0  |      | 48.0 | 48.0  |      |      |      |      |
| Effective Green, g (s)    |      |      |      |      | 35.0  |      | 47.0 | 47.0  |      |      |      |      |
| Actuated g/C Ratio        |      |      |      |      | 0.39  |      | 0.52 | 0.52  |      |      |      |      |
| Clearance Time (s)        |      |      |      |      | 3.0   |      | 3.0  | 3.0   |      |      |      |      |
| Lane Grp Cap (vph)        |      |      |      |      | 1911  |      | 795  | 2426  |      |      |      |      |
| v/s Ratio Prot            |      |      |      |      | c0.11 |      |      | c0.26 |      |      |      |      |
| v/s Ratio Perm            |      |      |      |      |       |      | 0.06 |       |      |      |      |      |
| v/c Ratio                 |      |      |      |      | 0.29  |      | 0.12 | 0.49  |      |      |      |      |
| Uniform Delay, d1         |      |      |      |      | 18.9  |      | 10.9 | 13.8  |      |      |      |      |
| Progression Factor        |      |      |      |      | 0.49  |      | 0.01 | 0.43  |      |      |      |      |
| Incremental Delay, d2     |      |      |      |      | 0.3   |      | 0.3  | 0.7   |      |      |      |      |
| Delay (s)                 |      |      |      |      | 9.5   |      | 0.4  | 6.6   |      |      |      |      |
| Level of Service          |      |      |      |      | A     |      | A    | A     |      |      |      |      |
| Approach Delay (s)        |      | 0.0  |      |      | 9.5   |      |      | 5.8   |      |      | 0.0  |      |
| Approach LOS              |      | A    |      |      | A     |      |      | A     |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 6.9   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.40  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 50.8% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 5880: N Street & 30th Street

6/1/2005



| Movement                          | EBL  | EBT   | WBT  | WBR  | NBL  | NBT  | NBR   | NEL2 | NEL   | NER  |
|-----------------------------------|------|-------|------|------|------|------|-------|------|-------|------|
| Lane Configurations               | ↶    | ↷     | ↷    |      |      | ↷↷↷  |       |      | ↷↷    |      |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 |
| Total Lost time (s)               | 4.0  | 4.0   | 4.0  |      |      | 4.0  |       |      | 4.0   |      |
| Lane Util. Factor                 | 1.00 | 1.00  | 1.00 |      |      | 0.91 |       |      | 0.97  |      |
| Fr <sub>t</sub>                   | 1.00 | 1.00  | 0.97 |      |      | 0.99 |       |      | 0.98  |      |
| Fl <sub>t</sub> Protected         | 0.95 | 1.00  | 1.00 |      |      | 0.99 |       |      | 0.96  |      |
| Satd. Flow (prot)                 | 1770 | 1863  | 1814 |      |      | 4968 |       |      | 3403  |      |
| Fl <sub>t</sub> Permitted         | 0.49 | 1.00  | 1.00 |      |      | 0.99 |       |      | 0.96  |      |
| Satd. Flow (perm)                 | 920  | 1863  | 1814 |      |      | 4968 |       |      | 3403  |      |
| Volume (vph)                      | 89   | 589   | 235  | 57   | 89   | 376  | 50    | 268  | 385   | 79   |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)                   | 89   | 589   | 235  | 57   | 89   | 376  | 50    | 268  | 385   | 79   |
| RTOR Reduction (vph)              | 0    | 0     | 10   | 0    | 0    | 14   | 0     | 0    | 0     | 0    |
| Lane Group Flow (vph)             | 89   | 589   | 282  | 0    | 0    | 501  | 0     | 0    | 732   | 0    |
| Turn Type                         | Perm |       |      | Perm |      |      | Split |      |       |      |
| Protected Phases                  |      | 4     | 8    |      |      | 2    |       | 6    | 6     |      |
| Permitted Phases                  | 4    |       |      |      | 2    |      |       |      |       |      |
| Actuated Green, G (s)             | 40.0 | 40.0  | 40.0 |      |      | 15.0 |       |      | 26.0  |      |
| Effective Green, g (s)            | 39.0 | 39.0  | 39.0 |      |      | 14.0 |       |      | 25.0  |      |
| Actuated g/C Ratio                | 0.43 | 0.43  | 0.43 |      |      | 0.16 |       |      | 0.28  |      |
| Clearance Time (s)                | 3.0  | 3.0   | 3.0  |      |      | 3.0  |       |      | 3.0   |      |
| Lane Grp Cap (vph)                | 399  | 807   | 786  |      |      | 773  |       |      | 945   |      |
| v/s Ratio Prot                    |      | c0.32 | 0.16 |      |      |      |       |      | c0.22 |      |
| v/s Ratio Perm                    | 0.10 |       |      |      |      | 0.10 |       |      |       |      |
| v/c Ratio                         | 0.22 | 0.73  | 0.36 |      |      | 0.65 |       |      | 0.77  |      |
| Uniform Delay, d <sub>1</sub>     | 16.0 | 21.1  | 17.1 |      |      | 35.7 |       |      | 29.9  |      |
| Progression Factor                | 0.23 | 0.22  | 0.60 |      |      | 0.97 |       |      | 1.00  |      |
| Incremental Delay, d <sub>2</sub> | 0.5  | 2.1   | 1.1  |      |      | 4.1  |       |      | 6.2   |      |
| Delay (s)                         | 4.1  | 6.8   | 11.3 |      |      | 38.6 |       |      | 36.1  |      |
| Level of Service                  | A    | A     | B    |      |      | D    |       |      | D     |      |
| Approach Delay (s)                |      | 6.5   | 11.3 |      |      | 38.6 |       |      | 36.1  |      |
| Approach LOS                      |      | A     | B    |      |      | D    |       |      | D     |      |

| Intersection Summary              |  |       |                      |      |
|-----------------------------------|--|-------|----------------------|------|
| HCM Average Control Delay         |  | 24.3  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      |  | 0.73  |                      |      |
| Actuated Cycle Length (s)         |  | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization |  | 72.3% | ICU Level of Service | C    |
| Analysis Period (min)             |  | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 5882: P Street & 30th Street

6/1/2005



| Movement               | WBT   | WBR  | WBR2 | NBL2 | NBL   | NBT  |
|------------------------|-------|------|------|------|-------|------|
| Lane Configurations    | ↑↑↑   |      |      |      | ↑     | ↑↑↑  |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0   |      |      |      | 4.0   | 4.0  |
| Lane Util. Factor      | 0.91  |      |      |      | 1.00  | 0.91 |
| Frt                    | 0.94  |      |      |      | 1.00  | 1.00 |
| Flt Protected          | 1.00  |      |      |      | 0.95  | 1.00 |
| Satd. Flow (prot)      | 4794  |      |      |      | 1593  | 4916 |
| Flt Permitted          | 1.00  |      |      |      | 0.95  | 1.00 |
| Satd. Flow (perm)      | 4794  |      |      |      | 1593  | 4916 |
| Volume (vph)           | 775   | 346  | 132  | 110  | 501   | 376  |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 775   | 346  | 132  | 110  | 501   | 376  |
| RTOR Reduction (vph)   | 16    | 0    | 0    | 0    | 9     | 0    |
| Lane Group Flow (vph)  | 1237  | 0    | 0    | 0    | 602   | 376  |
| Parking (#/hr)         |       | 0    | 0    | 0    | 0     | 0    |
| Turn Type              |       |      |      | Perm | Perm  |      |
| Protected Phases       | 6     |      |      |      |       | 8    |
| Permitted Phases       |       |      |      | 8    | 8     |      |
| Actuated Green, G (s)  | 33.0  |      |      |      | 51.0  | 51.0 |
| Effective Green, g (s) | 32.0  |      |      |      | 50.0  | 50.0 |
| Actuated g/C Ratio     | 0.36  |      |      |      | 0.56  | 0.56 |
| Clearance Time (s)     | 3.0   |      |      |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)     | 1705  |      |      |      | 885   | 2731 |
| v/s Ratio Prot         | c0.26 |      |      |      |       | 0.08 |
| v/s Ratio Perm         |       |      |      |      | c0.38 |      |
| v/c Ratio              | 0.73  |      |      |      | 0.68  | 0.14 |
| Uniform Delay, d1      | 25.2  |      |      |      | 14.3  | 9.6  |
| Progression Factor     | 0.19  |      |      |      | 1.00  | 1.00 |
| Incremental Delay, d2  | 1.5   |      |      |      | 4.2   | 0.1  |
| Delay (s)              | 6.1   |      |      |      | 18.5  | 9.7  |
| Level of Service       | A     |      |      |      | B     | A    |
| Approach Delay (s)     | 6.1   |      |      |      |       | 15.2 |
| Approach LOS           | A     |      |      |      |       | B    |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.1  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.70  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 66.2% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
5886: Capitol & 30th Street

6/1/2005



| Movement                          | EBL   | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|-------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations               | ↵     | ↕↕   |      |      | ↕↕    |      |      | ↕↕↕  |      |      |      |      |
| Ideal Flow (vphpl)                | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               | 4.0   | 4.0  |      |      | 4.0   |      |      | 4.0  |      |      |      |      |
| Lane Util. Factor                 | 1.00  | 0.95 |      |      | 0.95  |      |      | 0.91 |      |      |      |      |
| Fr <sub>t</sub>                   | 1.00  | 1.00 |      |      | 0.98  |      |      | 0.98 |      |      |      |      |
| Fl <sub>t</sub> Protected         | 0.95  | 1.00 |      |      | 1.00  |      |      | 1.00 |      |      |      |      |
| Satd. Flow (prot)                 | 1770  | 3539 |      |      | 3480  |      |      | 4945 |      |      |      |      |
| Fl <sub>t</sub> Permitted         | 0.95  | 1.00 |      |      | 1.00  |      |      | 1.00 |      |      |      |      |
| Satd. Flow (perm)                 | 1770  | 3539 |      |      | 3480  |      |      | 4945 |      |      |      |      |
| Volume (vph)                      | 112   | 402  | 0    | 0    | 468   | 59   | 68   | 680  | 141  | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 112   | 402  | 0    | 0    | 468   | 59   | 68   | 680  | 141  | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0     | 0    | 0    | 0    | 11    | 0    | 0    | 31   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 112   | 402  | 0    | 0    | 516   | 0    | 0    | 858  | 0    | 0    | 0    | 0    |
| Turn Type                         | Prot  |      |      |      |       |      | Perm |      |      |      |      |      |
| Protected Phases                  | 7     | 4    |      |      | 8     |      |      | 2    |      |      |      |      |
| Permitted Phases                  |       |      |      |      |       |      |      | 2    |      |      |      |      |
| Actuated Green, G (s)             | 21.0  | 53.0 |      |      | 29.0  |      |      | 31.0 |      |      |      |      |
| Effective Green, g (s)            | 20.0  | 52.0 |      |      | 28.0  |      |      | 30.0 |      |      |      |      |
| Actuated g/C Ratio                | 0.22  | 0.58 |      |      | 0.31  |      |      | 0.33 |      |      |      |      |
| Clearance Time (s)                | 3.0   | 3.0  |      |      | 3.0   |      |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)                | 393   | 2045 |      |      | 1083  |      |      | 1648 |      |      |      |      |
| v/s Ratio Prot                    | c0.06 | 0.11 |      |      | c0.15 |      |      |      |      |      |      |      |
| v/s Ratio Perm                    |       |      |      |      |       |      |      | 0.17 |      |      |      |      |
| v/c Ratio                         | 0.28  | 0.20 |      |      | 0.48  |      |      | 0.52 |      |      |      |      |
| Uniform Delay, d <sub>1</sub>     | 29.1  | 9.1  |      |      | 25.1  |      |      | 24.2 |      |      |      |      |
| Progression Factor                | 1.07  | 1.40 |      |      | 0.37  |      |      | 0.53 |      |      |      |      |
| Incremental Delay, d <sub>2</sub> | 1.5   | 0.2  |      |      | 0.6   |      |      | 0.9  |      |      |      |      |
| Delay (s)                         | 32.6  | 12.9 |      |      | 9.9   |      |      | 13.7 |      |      |      |      |
| Level of Service                  | C     | B    |      |      | A     |      |      | B    |      |      |      |      |
| Approach Delay (s)                |       | 17.2 |      |      | 9.9   |      |      | 13.7 |      |      | 0.0  |      |
| Approach LOS                      |       | B    |      |      | A     |      |      | B    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 13.6  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.44  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 76.7% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
5888: Capitol & 29th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL   | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|-------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑↑   |      | ↖     | ↑↑   |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      | 4.0   | 4.0  |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 0.95 |      | 1.00  | 0.95 |      |      |      |      |      | 0.91 |      |
| Fr <sub>t</sub>        |      | 0.94 |      | 1.00  | 1.00 |      |      |      |      |      | 0.99 |      |
| Flt Protected          |      | 1.00 |      | 0.95  | 1.00 |      |      |      |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 3148 |      | 1770  | 3539 |      |      |      |      |      | 4848 |      |
| Flt Permitted          |      | 1.00 |      | 0.32  | 1.00 |      |      |      |      |      | 1.00 |      |
| Satd. Flow (perm)      |      | 3148 |      | 596   | 3539 |      |      |      |      |      | 4848 |      |
| Volume (vph)           | 0    | 394  | 292  | 198   | 413  | 0    | 0    | 0    | 0    | 123  | 1565 | 125  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 394  | 292  | 198   | 413  | 0    | 0    | 0    | 0    | 123  | 1565 | 125  |
| RTOR Reduction (vph)   | 0    | 4    | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 9    | 0    |
| Lane Group Flow (vph)  | 0    | 682  | 0    | 198   | 413  | 0    | 0    | 0    | 0    | 0    | 1804 | 0    |
| Parking (#/hr)         |      | 0    | 0    |       |      |      |      |      |      |      | 0    | 0    |
| Turn Type              |      |      |      | Perm  |      |      |      |      |      | Perm |      |      |
| Protected Phases       |      | 4    |      |       | 8    |      |      |      |      |      | 6    |      |
| Permitted Phases       |      |      |      | 8     |      |      |      |      |      | 6    |      |      |
| Actuated Green, G (s)  |      | 44.0 |      | 44.0  | 44.0 |      |      |      |      |      | 40.0 |      |
| Effective Green, g (s) |      | 43.0 |      | 43.0  | 43.0 |      |      |      |      |      | 39.0 |      |
| Actuated g/C Ratio     |      | 0.48 |      | 0.48  | 0.48 |      |      |      |      |      | 0.43 |      |
| Clearance Time (s)     |      | 3.0  |      | 3.0   | 3.0  |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 1504 |      | 285   | 1691 |      |      |      |      |      | 2101 |      |
| v/s Ratio Prot         |      | 0.22 |      |       | 0.12 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      |      | c0.33 |      |      |      |      |      |      | 0.37 |      |
| v/c Ratio              |      | 0.45 |      | 0.69  | 0.24 |      |      |      |      |      | 0.86 |      |
| Uniform Delay, d1      |      | 15.7 |      | 18.4  | 13.9 |      |      |      |      |      | 23.0 |      |
| Progression Factor     |      | 0.67 |      | 0.35  | 0.25 |      |      |      |      |      | 0.58 |      |
| Incremental Delay, d2  |      | 0.3  |      | 12.1  | 0.3  |      |      |      |      |      | 4.1  |      |
| Delay (s)              |      | 10.8 |      | 18.6  | 3.8  |      |      |      |      |      | 17.5 |      |
| Level of Service       |      | B    |      | B     | A    |      |      |      |      |      | B    |      |
| Approach Delay (s)     |      | 10.8 |      |       | 8.6  |      |      | 0.0  |      |      | 17.5 |      |
| Approach LOS           |      | B    |      |       | A    |      |      | A    |      |      | B    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 14.2  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.77  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 76.7% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
5890: Capitol & 26th St

6/1/2005



| Movement                          | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations               | ↖    | ↗    |      | ↖    | ↗    |      |      | ↕    |      |      | ↕    |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               | 4.0  | 4.0  |      | 4.0  | 4.0  |      |      | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor                 | 1.00 | 1.00 |      | 1.00 | 1.00 |      |      | 1.00 |      |      | 1.00 |      |
| Fr <sub>t</sub>                   | 1.00 | 1.00 |      | 1.00 | 0.99 |      |      | 0.98 |      |      | 0.98 |      |
| Fl <sub>t</sub> Protected         | 0.95 | 1.00 |      | 0.95 | 1.00 |      |      | 1.00 |      |      | 0.98 |      |
| Satd. Flow (prot)                 | 1770 | 1671 |      | 1770 | 1668 |      |      | 1631 |      |      | 1622 |      |
| Fl <sub>t</sub> Permitted         | 0.30 | 1.00 |      | 0.38 | 1.00 |      |      | 0.99 |      |      | 0.91 |      |
| Satd. Flow (perm)                 | 561  | 1671 |      | 715  | 1668 |      |      | 1618 |      |      | 1496 |      |
| Volume (vph)                      | 11   | 525  | 12   | 19   | 636  | 23   | 5    | 60   | 14   | 31   | 50   | 11   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 11   | 525  | 12   | 19   | 636  | 23   | 5    | 60   | 14   | 31   | 50   | 11   |
| RTOR Reduction (vph)              | 0    | 1    | 0    | 0    | 2    | 0    | 0    | 10   | 0    | 0    | 8    | 0    |
| Lane Group Flow (vph)             | 11   | 536  | 0    | 19   | 657  | 0    | 0    | 69   | 0    | 0    | 84   | 0    |
| Parking (#/hr)                    |      | 0    | 0    |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Turn Type                         | Perm |      |      | Perm |      |      | Perm |      |      | Perm |      |      |
| Protected Phases                  |      | 4    |      |      | 8    |      |      | 2    |      |      | 6    |      |
| Permitted Phases                  | 4    |      |      | 8    |      |      | 2    |      |      | 6    |      |      |
| Actuated Green, G (s)             | 37.0 | 37.0 |      | 37.0 | 37.0 |      |      | 17.0 |      |      | 17.0 |      |
| Effective Green, g (s)            | 36.0 | 36.0 |      | 36.0 | 36.0 |      |      | 16.0 |      |      | 16.0 |      |
| Actuated g/C Ratio                | 0.60 | 0.60 |      | 0.60 | 0.60 |      |      | 0.27 |      |      | 0.27 |      |
| Clearance Time (s)                | 3.0  | 3.0  |      | 3.0  | 3.0  |      |      | 3.0  |      |      | 3.0  |      |
| Lane Grp Cap (vph)                | 337  | 1003 |      | 429  | 1001 |      |      | 431  |      |      | 399  |      |
| v/s Ratio Prot                    |      | 0.32 |      |      | 0.39 |      |      |      |      |      |      |      |
| v/s Ratio Perm                    | 0.02 |      |      | 0.03 |      |      |      | 0.04 |      |      | 0.06 |      |
| v/c Ratio                         | 0.03 | 0.53 |      | 0.04 | 0.66 |      |      | 0.16 |      |      | 0.21 |      |
| Uniform Delay, d <sub>1</sub>     | 4.9  | 7.1  |      | 4.9  | 7.9  |      |      | 16.8 |      |      | 17.1 |      |
| Progression Factor                | 1.00 | 1.00 |      | 1.00 | 1.00 |      |      | 1.00 |      |      | 0.68 |      |
| Incremental Delay, d <sub>2</sub> | 0.2  | 2.0  |      | 0.2  | 3.4  |      |      | 0.8  |      |      | 1.2  |      |
| Delay (s)                         | 5.1  | 9.1  |      | 5.1  | 11.3 |      |      | 17.6 |      |      | 12.8 |      |
| Level of Service                  | A    | A    |      | A    | B    |      |      | B    |      |      | B    |      |
| Approach Delay (s)                |      | 9.0  |      |      | 11.1 |      |      | 17.6 |      |      | 12.8 |      |
| Approach LOS                      |      | A    |      |      | B    |      |      | B    |      |      | B    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.8  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.52  |                      |     |
| Actuated Cycle Length (s)         | 60.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 53.2% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
6481: J Street & 28th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL   | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|-------|------|------|------|------|------|
| Lane Configurations    | ↔↑↑↔ |      |      |      |      |      | ↑↔    |      |      | ↔    |      |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0  |      |      |      |      |      | 4.0   |      |      | 4.0  |      |      |
| Lane Util. Factor      | 0.91 |      |      |      |      |      | 1.00  |      |      | 1.00 |      |      |
| Frt                    | 1.00 |      |      |      |      |      | 0.92  |      |      | 1.00 |      |      |
| Flt Protected          | 1.00 |      |      |      |      |      | 1.00  |      |      | 0.99 |      |      |
| Satd. Flow (prot)      | 4888 |      |      |      |      |      | 1550  |      |      | 1666 |      |      |
| Flt Permitted          | 1.00 |      |      |      |      |      | 1.00  |      |      | 0.96 |      |      |
| Satd. Flow (perm)      | 4888 |      |      |      |      |      | 1550  |      |      | 1602 |      |      |
| Volume (vph)           | 37   | 1942 | 66   | 0    | 0    | 0    | 0     | 172  | 218  | 8    | 53   | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 37   | 1942 | 66   | 0    | 0    | 0    | 0     | 172  | 218  | 8    | 53   | 0    |
| RTOR Reduction (vph)   | 0    | 4    | 0    | 0    | 0    | 0    | 0     | 4    | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 2041 | 0    | 0    | 0    | 0    | 0     | 386  | 0    | 0    | 61   | 0    |
| Parking (#/hr)         | 0    | 0    | 0    |      |      |      |       | 0    | 0    | 0    | 0    |      |
| Turn Type              | Perm |      |      |      |      |      |       |      |      | Perm |      |      |
| Protected Phases       | 4    |      |      |      |      |      | 2     |      |      | 6    |      |      |
| Permitted Phases       | 4    |      |      |      |      |      |       |      |      | 6    |      |      |
| Actuated Green, G (s)  | 48.0 |      |      |      |      |      | 36.0  |      |      | 36.0 |      |      |
| Effective Green, g (s) | 47.0 |      |      |      |      |      | 35.0  |      |      | 35.0 |      |      |
| Actuated g/C Ratio     | 0.52 |      |      |      |      |      | 0.39  |      |      | 0.39 |      |      |
| Clearance Time (s)     | 3.0  |      |      |      |      |      | 3.0   |      |      | 3.0  |      |      |
| Lane Grp Cap (vph)     | 2553 |      |      |      |      |      | 603   |      |      | 623  |      |      |
| v/s Ratio Prot         |      |      |      |      |      |      | c0.25 |      |      |      |      |      |
| v/s Ratio Perm         | 0.42 |      |      |      |      |      |       |      |      | 0.04 |      |      |
| v/c Ratio              | 0.80 |      |      |      |      |      | 0.64  |      |      | 0.10 |      |      |
| Uniform Delay, d1      | 17.6 |      |      |      |      |      | 22.4  |      |      | 17.5 |      |      |
| Progression Factor     | 1.00 |      |      |      |      |      | 0.79  |      |      | 1.00 |      |      |
| Incremental Delay, d2  | 2.7  |      |      |      |      |      | 5.1   |      |      | 0.3  |      |      |
| Delay (s)              | 20.4 |      |      |      |      |      | 22.8  |      |      | 17.8 |      |      |
| Level of Service       | C    |      |      |      |      |      | C     |      |      | B    |      |      |
| Approach Delay (s)     | 20.4 |      |      |      |      |      | 0.0   |      |      | 22.8 |      |      |
| Approach LOS           | C    |      |      |      |      |      | A     |      |      | C    |      |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 20.7  | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 0.73  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 68.8% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6482: K Street & 28th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↖    | ↗    |      | ↖    | ↗    |      | ↖    | ↗    |      | ↖    | ↗    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  |      | 4.0  | 4.0  |      | 4.0  | 4.0  |      | 4.0  | 4.0  |
| Lane Util. Factor      |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |
| Frnt                   |      | 1.00 | 0.85 |      | 1.00 | 0.85 |      | 1.00 | 0.85 |      | 1.00 | 0.85 |
| Flt Protected          |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 0.99 | 1.00 |      | 0.99 | 1.00 |
| Satd. Flow (prot)      |      | 1673 | 1425 |      | 1672 | 1425 |      | 1656 | 1425 |      | 1654 | 1425 |
| Flt Permitted          |      | 0.96 | 1.00 |      | 0.96 | 1.00 |      | 0.88 | 1.00 |      | 0.86 | 1.00 |
| Satd. Flow (perm)      |      | 1615 | 1425 |      | 1604 | 1425 |      | 1483 | 1425 |      | 1445 | 1425 |
| Volume (vph)           | 24   | 486  | 26   | 35   | 579  | 115  | 65   | 201  | 102  | 51   | 136  | 32   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 24   | 486  | 26   | 35   | 579  | 115  | 65   | 201  | 102  | 51   | 136  | 32   |
| RTOR Reduction (vph)   | 0    | 0    | 7    | 0    | 0    | 25   | 0    | 0    | 69   | 0    | 0    | 22   |
| Lane Group Flow (vph)  | 0    | 510  | 19   | 0    | 614  | 90   | 0    | 266  | 33   | 0    | 187  | 10   |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      | Perm | Perm |      | Perm | Perm |      | Perm | Perm |      | Perm |
| Protected Phases       |      | 4    |      |      | 8    |      |      | 2    |      |      | 6    |      |
| Permitted Phases       | 4    |      | 4    | 8    |      | 8    | 2    |      | 2    | 6    |      | 6    |
| Actuated Green, G (s)  |      | 54.0 | 54.0 |      | 54.0 | 54.0 |      | 30.0 | 30.0 |      | 30.0 | 30.0 |
| Effective Green, g (s) |      | 53.0 | 53.0 |      | 53.0 | 53.0 |      | 29.0 | 29.0 |      | 29.0 | 29.0 |
| Actuated g/C Ratio     |      | 0.59 | 0.59 |      | 0.59 | 0.59 |      | 0.32 | 0.32 |      | 0.32 | 0.32 |
| Clearance Time (s)     |      | 3.0  | 3.0  |      | 3.0  | 3.0  |      | 3.0  | 3.0  |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |      | 951  | 839  |      | 945  | 839  |      | 478  | 459  |      | 466  | 459  |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      | 0.32 | 0.01 |      | 0.38 | 0.06 |      | 0.18 | 0.02 |      | 0.13 | 0.01 |
| v/c Ratio              |      | 0.54 | 0.02 |      | 0.65 | 0.11 |      | 0.56 | 0.07 |      | 0.40 | 0.02 |
| Uniform Delay, d1      |      | 11.1 | 7.7  |      | 12.3 | 8.1  |      | 25.2 | 21.2 |      | 23.7 | 20.8 |
| Progression Factor     |      | 1.00 | 1.00 |      | 0.48 | 0.43 |      | 0.72 | 0.13 |      | 0.94 | 0.83 |
| Incremental Delay, d2  |      | 2.2  | 0.0  |      | 2.7  | 0.2  |      | 3.9  | 0.3  |      | 2.5  | 0.1  |
| Delay (s)              |      | 13.3 | 7.8  |      | 8.6  | 3.7  |      | 22.0 | 3.1  |      | 24.8 | 17.4 |
| Level of Service       |      | B    | A    |      | A    | A    |      | C    | A    |      | C    | B    |
| Approach Delay (s)     |      | 13.0 |      |      | 7.8  |      |      | 16.8 |      |      | 23.7 |      |
| Approach LOS           |      | B    |      |      | A    |      |      | B    |      |      | C    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 13.0  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.62  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 93.3% | ICU Level of Service | F   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6483: L Street & 28th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      |      | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor      |      |      |      |      | 0.95 |      |      | 1.00 |      |      | 1.00 |      |
| Frt                    |      |      |      |      | 0.98 |      |      | 1.00 |      |      | 0.98 |      |
| Flt Protected          |      |      |      |      | 0.99 |      |      | 0.99 |      |      | 1.00 |      |
| Satd. Flow (prot)      |      |      |      |      | 3257 |      |      | 1662 |      |      | 1636 |      |
| Flt Permitted          |      |      |      |      | 0.99 |      |      | 0.92 |      |      | 1.00 |      |
| Satd. Flow (perm)      |      |      |      |      | 3257 |      |      | 1534 |      |      | 1636 |      |
| Volume (vph)           | 0    | 0    | 0    | 151  | 632  | 144  | 59   | 271  | 0    | 0    | 165  | 36   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 151  | 632  | 144  | 59   | 271  | 0    | 0    | 165  | 36   |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 17   | 0    | 0    | 0    | 0    | 0    | 9    | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 910  | 0    | 0    | 330  | 0    | 0    | 192  | 0    |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Turn Type              |      |      |      | Perm |      |      | Perm |      |      |      |      |      |
| Protected Phases       |      |      |      |      | 6    |      |      | 8    |      |      | 4    |      |
| Permitted Phases       |      |      |      | 6    |      |      | 8    |      |      |      |      |      |
| Actuated Green, G (s)  |      |      |      |      | 45.0 |      |      | 39.0 |      |      | 39.0 |      |
| Effective Green, g (s) |      |      |      |      | 44.0 |      |      | 38.0 |      |      | 38.0 |      |
| Actuated g/C Ratio     |      |      |      |      | 0.49 |      |      | 0.42 |      |      | 0.42 |      |
| Clearance Time (s)     |      |      |      |      | 3.0  |      |      | 3.0  |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      |      |      |      | 1592 |      |      | 648  |      |      | 691  |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      | 0.12 |      |
| v/s Ratio Perm         |      |      |      |      | 0.28 |      |      | 0.22 |      |      |      |      |
| v/c Ratio              |      |      |      |      | 0.57 |      |      | 0.51 |      |      | 0.28 |      |
| Uniform Delay, d1      |      |      |      |      | 16.3 |      |      | 19.1 |      |      | 17.0 |      |
| Progression Factor     |      |      |      |      | 0.64 |      |      | 1.22 |      |      | 0.42 |      |
| Incremental Delay, d2  |      |      |      |      | 1.5  |      |      | 1.7  |      |      | 0.9  |      |
| Delay (s)              |      |      |      |      | 11.9 |      |      | 25.1 |      |      | 8.1  |      |
| Level of Service       |      |      |      |      | B    |      |      | C    |      |      | A    |      |
| Approach Delay (s)     |      | 0.0  |      |      | 11.9 |      |      | 25.1 |      |      | 8.1  |      |
| Approach LOS           |      | A    |      |      | B    |      |      | C    |      |      | A    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 14.3  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.54  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 64.8% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6484: Capitol & 28th Street

6/1/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|-------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations    |      | ↕     |      | ↗    | ↖    |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0   |      | 4.0  | 4.0  |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00  |      | 1.00 | 1.00 |      |      | 1.00  |      |      | 1.00 |      |
| Fr't                   |      | 0.98  |      | 1.00 | 0.99 |      |      | 0.95  |      |      | 1.00 |      |
| Flt Protected          |      | 1.00  |      | 0.95 | 1.00 |      |      | 0.98  |      |      | 0.98 |      |
| Satd. Flow (prot)      |      | 1642  |      | 1770 | 1656 |      |      | 1569  |      |      | 1646 |      |
| Flt Permitted          |      | 0.91  |      | 0.28 | 1.00 |      |      | 0.73  |      |      | 0.71 |      |
| Satd. Flow (perm)      |      | 1505  |      | 514  | 1656 |      |      | 1161  |      |      | 1191 |      |
| Volume (vph)           | 22   | 523   | 90   | 56   | 522  | 46   | 226  | 185   | 221  | 103  | 225  | 8    |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 22   | 523   | 90   | 56   | 522  | 46   | 226  | 185   | 221  | 103  | 225  | 8    |
| RTOR Reduction (vph)   | 0    | 6     | 0    | 0    | 3    | 0    | 0    | 21    | 0    | 0    | 1    | 0    |
| Lane Group Flow (vph)  | 0    | 629   | 0    | 56   | 565  | 0    | 0    | 611   | 0    | 0    | 335  | 0    |
| Parking (#/hr)         | 0    | 0     | 0    |      | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |       |      | Perm |      |      | Perm |       |      | Perm |      |      |
| Protected Phases       |      | 4     |      |      | 8    |      |      | 2     |      |      | 6    |      |
| Permitted Phases       | 4    |       |      | 8    |      |      | 2    |       |      | 6    |      |      |
| Actuated Green, G (s)  |      | 39.0  |      | 39.0 | 39.0 |      |      | 45.0  |      |      | 45.0 |      |
| Effective Green, g (s) |      | 38.0  |      | 38.0 | 38.0 |      |      | 44.0  |      |      | 44.0 |      |
| Actuated g/C Ratio     |      | 0.42  |      | 0.42 | 0.42 |      |      | 0.49  |      |      | 0.49 |      |
| Clearance Time (s)     |      | 3.0   |      | 3.0  | 3.0  |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 635   |      | 217  | 699  |      |      | 568   |      |      | 582  |      |
| v/s Ratio Prot         |      |       |      |      | 0.34 |      |      |       |      |      |      |      |
| v/s Ratio Perm         |      | c0.42 |      | 0.11 |      |      |      | c0.53 |      |      | 0.28 |      |
| v/c Ratio              |      | 0.99  |      | 0.26 | 0.81 |      |      | 1.07  |      |      | 0.58 |      |
| Uniform Delay, d1      |      | 25.8  |      | 16.9 | 22.8 |      |      | 23.0  |      |      | 16.4 |      |
| Progression Factor     |      | 1.00  |      | 0.52 | 0.49 |      |      | 0.79  |      |      | 0.74 |      |
| Incremental Delay, d2  |      | 33.4  |      | 2.7  | 9.4  |      |      | 57.9  |      |      | 3.8  |      |
| Delay (s)              |      | 59.2  |      | 11.6 | 20.5 |      |      | 76.1  |      |      | 16.0 |      |
| Level of Service       |      | E     |      | B    | C    |      |      | E     |      |      | B    |      |
| Approach Delay (s)     |      | 59.2  |      |      | 19.7 |      |      | 76.1  |      |      | 16.0 |      |
| Approach LOS           |      | E     |      |      | B    |      |      | E     |      |      | B    |      |

| Intersection Summary              |        |                      |     |
|-----------------------------------|--------|----------------------|-----|
| HCM Average Control Delay         | 46.4   | HCM Level of Service | D   |
| HCM Volume to Capacity ratio      | 1.04   |                      |     |
| Actuated Cycle Length (s)         | 90.0   | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 107.9% | ICU Level of Service | G   |
| Analysis Period (min)             | 15     |                      |     |
| c Critical Lane Group             |        |                      |     |

HCM Signalized Intersection Capacity Analysis  
6485: N Street & 28th Street

7/11/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|-------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations    |      | ↕↕    |      |      | ↕↕   |      |      | ↑    |      |      | ↕     |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      | 4.0  |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor      |      | 0.95  |      |      | 1.00 |      |      | 1.00 |      |      | 1.00  |      |
| Frt                    |      | 1.00  |      |      | 0.89 |      |      | 0.96 |      |      | 1.00  |      |
| Flt Protected          |      | 0.99  |      |      | 0.99 |      |      | 1.00 |      |      | 0.96  |      |
| Satd. Flow (prot)      |      | 3326  |      |      | 1475 |      |      | 1612 |      |      | 1617  |      |
| Flt Permitted          |      | 0.87  |      |      | 0.80 |      |      | 1.00 |      |      | 0.66  |      |
| Satd. Flow (perm)      |      | 2915  |      |      | 1195 |      |      | 1612 |      |      | 1111  |      |
| Volume (vph)           | 96   | 677   | 26   | 55   | 0    | 289  | 0    | 140  | 56   | 317  | 114   | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 96   | 677   | 26   | 55   | 0    | 289  | 0    | 140  | 56   | 317  | 114   | 0    |
| RTOR Reduction (vph)   | 0    | 5     | 0    | 0    | 186  | 0    | 0    | 30   | 0    | 0    | 0     | 0    |
| Lane Group Flow (vph)  | 0    | 794   |      | 0    | 0    | 158  | 0    | 0    | 166  | 0    | 0     | 431  |
| Parking (#/hr)         | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Turn Type              | Perm |       |      | Perm |      |      |      |      |      | Perm |       |      |
| Protected Phases       |      | 2     |      |      | 6    |      |      | 8    |      |      | 4     |      |
| Permitted Phases       | 2    |       |      | 6    |      |      |      |      |      | 4    |       |      |
| Actuated Green, G (s)  |      | 17.0  |      |      | 17.0 |      |      | 22.0 |      |      | 22.0  |      |
| Effective Green, g (s) |      | 16.0  |      |      | 16.0 |      |      | 21.0 |      |      | 21.0  |      |
| Actuated g/C Ratio     |      | 0.36  |      |      | 0.36 |      |      | 0.47 |      |      | 0.47  |      |
| Clearance Time (s)     |      | 3.0   |      |      | 3.0  |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)     |      | 1036  |      |      | 425  |      |      | 752  |      |      | 518   |      |
| v/s Ratio Prot         |      |       |      |      |      |      |      | 0.10 |      |      |       |      |
| v/s Ratio Perm         |      | c0.27 |      |      | 0.13 |      |      |      |      |      | c0.39 |      |
| v/c Ratio              |      | 0.77  |      |      | 0.37 |      |      | 0.22 |      |      | 0.83  |      |
| Uniform Delay, d1      |      | 12.8  |      |      | 10.8 |      |      | 7.1  |      |      | 10.5  |      |
| Progression Factor     |      | 1.00  |      |      | 5.81 |      |      | 1.00 |      |      | 1.23  |      |
| Incremental Delay, d2  |      | 5.4   |      |      | 1.4  |      |      | 0.7  |      |      | 12.6  |      |
| Delay (s)              |      | 18.3  |      |      | 64.0 |      |      | 7.8  |      |      | 25.4  |      |
| Level of Service       |      | B     |      |      | E    |      |      | A    |      |      | C     |      |
| Approach Delay (s)     |      | 18.3  |      |      | 64.0 |      |      | 7.8  |      |      | 25.4  |      |
| Approach LOS           |      | B     |      |      | E    |      |      | A    |      |      | C     |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 27.7  | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 0.80  |                      |     |
| Actuated Cycle Length (s)         | 45.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 90.9% | ICU Level of Service | E   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
6511: K Street & Alhambra

6/1/2005



| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations       |      | ↖    | ↗    |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |      | 4.0  | 4.0  |      | 4.0  |      |      | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor         |      | 1.00 | 1.00 |      | 1.00 |      |      | 0.95 |      |      | 0.95 |      |
| Fr <sub>t</sub>           |      | 1.00 | 0.85 |      | 0.99 |      |      | 0.98 |      |      | 0.95 |      |
| Fl <sub>t</sub> Protected |      | 0.98 | 1.00 |      | 0.99 |      |      | 0.99 |      |      | 1.00 |      |
| Satd. Flow (prot)         |      | 1821 | 1583 |      | 1816 |      |      | 3422 |      |      | 3351 |      |
| Fl <sub>t</sub> Permitted |      | 0.82 | 1.00 |      | 0.91 |      |      | 0.57 |      |      | 0.95 |      |
| Satd. Flow (perm)         |      | 1526 | 1583 |      | 1666 |      |      | 1981 |      |      | 3182 |      |
| Volume (vph)              | 71   | 83   | 303  | 39   | 97   | 14   | 111  | 349  | 85   | 12   | 747  | 412  |
| Peak-hour factor, PHF     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 71   | 83   | 303  | 39   | 97   | 14   | 111  | 349  | 85   | 12   | 747  | 412  |
| RTOR Reduction (vph)      | 0    | 0    | 114  | 0    | 4    | 0    | 0    | 17   | 0    | 0    | 81   | 0    |
| Lane Group Flow (vph)     | 0    | 154  | 189  | 0    | 146  | 0    | 0    | 528  | 0    | 0    | 1090 | 0    |
| Turn Type                 | Perm |      | Perm | Perm |      |      | Perm |      |      | Perm |      |      |
| Protected Phases          |      | 4    |      |      | 8    |      |      | 2    |      |      |      | 6    |
| Permitted Phases          | 4    |      | 4    | 8    |      |      | 2    |      |      | 6    |      |      |
| Actuated Green, G (s)     |      | 34.0 | 34.0 |      | 34.0 |      |      | 50.0 |      |      | 50.0 |      |
| Effective Green, g (s)    |      | 33.0 | 33.0 |      | 33.0 |      |      | 49.0 |      |      | 49.0 |      |
| Actuated g/C Ratio        |      | 0.37 | 0.37 |      | 0.37 |      |      | 0.54 |      |      | 0.54 |      |
| Clearance Time (s)        |      | 3.0  | 3.0  |      | 3.0  |      |      | 3.0  |      |      | 3.0  |      |
| Lane Grp Cap (vph)        |      | 560  | 580  |      | 611  |      |      | 1079 |      |      | 1732 |      |
| v/s Ratio Prot            |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm            |      | 0.10 | 0.12 |      | 0.09 |      |      | 0.27 |      |      | 0.34 |      |
| v/c Ratio                 |      | 0.28 | 0.33 |      | 0.24 |      |      | 0.49 |      |      | 0.63 |      |
| Uniform Delay, d1         |      | 20.1 | 20.5 |      | 19.8 |      |      | 12.7 |      |      | 14.2 |      |
| Progression Factor        |      | 0.99 | 1.11 |      | 1.00 |      |      | 0.93 |      |      | 0.52 |      |
| Incremental Delay, d2     |      | 1.2  | 1.4  |      | 0.9  |      |      | 0.1  |      |      | 1.0  |      |
| Delay (s)                 |      | 21.1 | 24.2 |      | 20.7 |      |      | 12.0 |      |      | 8.4  |      |
| Level of Service          |      | C    | C    |      | C    |      |      | B    |      |      | A    |      |
| Approach Delay (s)        |      | 23.2 |      |      | 20.7 |      |      | 12.0 |      |      | 8.4  |      |
| Approach LOS              |      | C    |      |      | C    |      |      | B    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 13.0  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.51  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 74.6% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 9622: K Street & 30th Street

6/1/2005



| Movement                          | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations               | ↖    | ↑    |      |      | ↑    | ↗    |      | ↕    |      |      |      |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               | 4.0  | 4.0  |      |      | 4.0  | 4.0  |      | 4.0  |      |      |      |      |
| Lane Util. Factor                 | 1.00 | 1.00 |      |      | 1.00 | 1.00 |      | 0.91 |      |      |      |      |
| Fr <sub>t</sub>                   | 1.00 | 1.00 |      |      | 1.00 | 0.85 |      | 0.98 |      |      |      |      |
| Fl <sub>t</sub> Protected         | 0.95 | 1.00 |      |      | 1.00 | 1.00 |      | 0.99 |      |      |      |      |
| Satd. Flow (prot)                 | 1770 | 1863 |      |      | 1863 | 1583 |      | 4949 |      |      |      |      |
| Fl <sub>t</sub> Permitted         | 0.30 | 1.00 |      |      | 1.00 | 1.00 |      | 0.99 |      |      |      |      |
| Satd. Flow (perm)                 | 551  | 1863 |      |      | 1863 | 1583 |      | 4949 |      |      |      |      |
| Volume (vph)                      | 83   | 266  | 0    | 0    | 603  | 24   | 169  | 779  | 139  | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 83   | 266  | 0    | 0    | 603  | 24   | 169  | 779  | 139  | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0    | 0    | 0    | 0    | 0    | 8    | 0    | 21   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 83   | 266  | 0    | 0    | 603  | 16   | 0    | 1066 | 0    | 0    | 0    | 0    |
| Turn Type                         | Perm |      |      | Perm |      |      | Perm |      |      |      |      |      |
| Protected Phases                  |      | 4    |      |      | 8    |      |      | 2    |      |      |      |      |
| Permitted Phases                  | 4    |      |      |      |      | 8    | 2    |      |      |      |      |      |
| Actuated Green, G (s)             | 51.0 | 51.0 |      |      | 51.0 | 51.0 |      | 33.0 |      |      |      |      |
| Effective Green, g (s)            | 50.0 | 50.0 |      |      | 50.0 | 50.0 |      | 32.0 |      |      |      |      |
| Actuated g/C Ratio                | 0.56 | 0.56 |      |      | 0.56 | 0.56 |      | 0.36 |      |      |      |      |
| Clearance Time (s)                | 3.0  | 3.0  |      |      | 3.0  | 3.0  |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)                | 306  | 1035 |      |      | 1035 | 879  |      | 1760 |      |      |      |      |
| v/s Ratio Prot                    |      | 0.14 |      |      | 0.32 |      |      |      |      |      |      |      |
| v/s Ratio Perm                    | 0.15 |      |      |      |      | 0.01 |      | 0.22 |      |      |      |      |
| v/c Ratio                         | 0.27 | 0.26 |      |      | 0.58 | 0.02 |      | 0.61 |      |      |      |      |
| Uniform Delay, d <sub>1</sub>     | 10.5 | 10.4 |      |      | 13.1 | 9.0  |      | 23.8 |      |      |      |      |
| Progression Factor                | 0.59 | 0.61 |      |      | 0.89 | 0.55 |      | 0.49 |      |      |      |      |
| Incremental Delay, d <sub>2</sub> | 2.0  | 0.5  |      |      | 2.0  | 0.0  |      | 1.4  |      |      |      |      |
| Delay (s)                         | 8.1  | 6.9  |      |      | 13.8 | 5.0  |      | 13.1 |      |      |      |      |
| Level of Service                  | A    | A    |      |      | B    | A    |      | B    |      |      |      |      |
| Approach Delay (s)                |      | 7.2  |      |      | 13.4 |      |      | 13.1 |      |      | 0.0  |      |
| Approach LOS                      |      | A    |      |      | B    |      |      | B    |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 12.2  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.59  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 68.6% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

CUMULATIVE PLUS TRINITY PROJECT  
WITH SMART PLAN

AM Peak Hour

Signalized Intersections

(am8)



HCM Signalized Intersection Capacity Analysis  
 2004: L Street & 21th Street

4/6/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT  | WBR  | NBL  | NBT                  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|-------|------|------|------|------|----------------------|------|------|------|------|
| Lane Configurations               |      |      |       |      | ↑↓   |      |      | ↑↑↑                  |      |      |      |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      |      |       |      | 4.0  |      |      | 4.0                  |      |      |      |      |
| Lane Util. Factor                 |      |      |       |      | 0.95 |      |      | 0.91                 |      |      |      |      |
| Frt                               |      |      |       |      | 0.96 |      |      | 1.00                 |      |      |      |      |
| Flt Protected                     |      |      |       |      | 1.00 |      |      | 0.99                 |      |      |      |      |
| Satd. Flow (prot)                 |      |      |       |      | 3225 |      |      | 4879                 |      |      |      |      |
| Flt Permitted                     |      |      |       |      | 1.00 |      |      | 0.99                 |      |      |      |      |
| Satd. Flow (perm)                 |      |      |       |      | 3225 |      |      | 4879                 |      |      |      |      |
| Volume (vph)                      | 0    | 0    | 0     | 0    | 713  | 266  | 250  | 1391                 | 0    | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 0    | 713  | 266  | 250  | 1391                 | 0    | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 0    | 8    | 0    | 0    | 52                   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 0    | 971  | 0    | 0    | 1589                 | 0    | 0    | 0    | 0    |
| Parking (#/hr)                    | 0    | 0    |       |      | 0    | 0    | 0    | 0                    | 0    |      |      |      |
| Turn Type                         |      |      |       |      |      |      | Perm |                      |      |      |      |      |
| Protected Phases                  |      |      |       |      | 6    |      |      | 8                    |      |      |      |      |
| Permitted Phases                  |      |      |       |      |      |      | 8    |                      |      |      |      |      |
| Actuated Green, G (s)             |      |      |       |      | 21.0 |      |      | 23.0                 |      |      |      |      |
| Effective Green, g (s)            |      |      |       |      | 20.0 |      |      | 22.0                 |      |      |      |      |
| Actuated g/C Ratio                |      |      |       |      | 0.40 |      |      | 0.44                 |      |      |      |      |
| Clearance Time (s)                |      |      |       |      | 3.0  |      |      | 3.0                  |      |      |      |      |
| Lane Grp Cap (vph)                |      |      |       |      | 1290 |      |      | 2147                 |      |      |      |      |
| v/s Ratio Prot                    |      |      |       |      | 0.30 |      |      |                      |      |      |      |      |
| v/s Ratio Perm                    |      |      |       |      |      |      |      | 0.33                 |      |      |      |      |
| v/c Ratio                         |      |      |       |      | 0.75 |      |      | 0.74                 |      |      |      |      |
| Uniform Delay, d1                 |      |      |       |      | 12.9 |      |      | 11.6                 |      |      |      |      |
| Progression Factor                |      |      |       |      | 0.37 |      |      | 1.00                 |      |      |      |      |
| Incremental Delay, d2             |      |      |       |      | 3.4  |      |      | 2.3                  |      |      |      |      |
| Delay (s)                         |      |      |       |      | 8.1  |      |      | 14.0                 |      |      |      |      |
| Level of Service                  |      |      |       |      | A    |      |      | B                    |      |      |      |      |
| Approach Delay (s)                |      | 0.0  |       |      | 8.1  |      |      | 14.0                 |      |      | 0.0  |      |
| Approach LOS                      |      | A    |       |      | A    |      |      | B                    |      |      | A    |      |
| <b>Intersection Summary</b>       |      |      |       |      |      |      |      |                      |      |      |      |      |
| HCM Average Control Delay         |      |      | 11.8  |      |      |      |      | HCM Level of Service |      |      | B    |      |
| HCM Volume to Capacity ratio      |      |      | 0.75  |      |      |      |      |                      |      |      |      |      |
| Actuated Cycle Length (s)         |      |      | 50.0  |      |      |      |      | Sum of lost time (s) |      |      | 8.0  |      |
| Intersection Capacity Utilization |      |      | 66.8% |      |      |      |      | ICU Level of Service |      |      | C    |      |
| Analysis Period (min)             |      |      | 15    |      |      |      |      |                      |      |      |      |      |
| c Critical Lane Group             |      |      |       |      |      |      |      |                      |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
 2012: J Street & 21th Street

4/6/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑↑↑  |      |      |      |      |      | ↑↑↑  |      |      |      |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      |      |      |      |      | 4.0  |      |      |      |      |
| Lane Util. Factor      |      | 0.91 |      |      |      |      |      | 0.91 |      |      |      |      |
| Frt                    |      | 1.00 |      |      |      |      |      | 0.98 |      |      |      |      |
| Flt Protected          |      | 1.00 |      |      |      |      |      | 1.00 |      |      |      |      |
| Satd. Flow (prot)      |      | 4914 |      |      |      |      |      | 4798 |      |      |      |      |
| Flt Permitted          |      | 1.00 |      |      |      |      |      | 1.00 |      |      |      |      |
| Satd. Flow (perm)      |      | 4914 |      |      |      |      |      | 4798 |      |      |      |      |
| Volume (vph)           | 7    | 1016 | 0    | 0    | 0    | 0    | 0    | 1318 | 250  | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 7    | 1016 | 0    | 0    | 0    | 0    | 0    | 1318 | 250  | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0    | 1    | 0    | 0    | 0    | 0    | 0    | 10   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 1022 | 0    | 0    | 0    | 0    | 0    | 1559 | 0    | 0    | 0    | 0    |
| Parking (#/hr)         | 0    | 0    |      |      |      |      |      | 0    | 0    |      |      |      |
| Turn Type              | Perm |      |      |      |      |      |      |      |      |      |      |      |
| Protected Phases       |      | 2    |      |      |      |      |      | 8    |      |      |      |      |
| Permitted Phases       | 2    |      |      |      |      |      |      |      |      |      |      |      |
| Actuated Green, G (s)  |      | 18.0 |      |      |      |      |      | 26.0 |      |      |      |      |
| Effective Green, g (s) |      | 17.0 |      |      |      |      |      | 25.0 |      |      |      |      |
| Actuated g/C Ratio     |      | 0.34 |      |      |      |      |      | 0.50 |      |      |      |      |
| Clearance Time (s)     |      | 3.0  |      |      |      |      |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)     |      | 1671 |      |      |      |      |      | 2399 |      |      |      |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      | 0.32 |      |      |      |      |
| v/s Ratio Perm         |      | 0.21 |      |      |      |      |      |      |      |      |      |      |
| v/c Ratio              |      | 0.61 |      |      |      |      |      | 0.65 |      |      |      |      |
| Uniform Delay, d1      |      | 13.7 |      |      |      |      |      | 9.3  |      |      |      |      |
| Progression Factor     |      | 0.52 |      |      |      |      |      | 0.27 |      |      |      |      |
| Incremental Delay, d2  |      | 1.4  |      |      |      |      |      | 0.9  |      |      |      |      |
| Delay (s)              |      | 8.5  |      |      |      |      |      | 3.4  |      |      |      |      |
| Level of Service       |      | A    |      |      |      |      |      | A    |      |      |      |      |
| Approach Delay (s)     |      | 8.5  |      |      | 0.0  |      |      | 3.4  |      |      | 0.0  |      |
| Approach LOS           |      | A    |      |      | A    |      |      | A    |      |      | A    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 5.4   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.63  |                      |     |
| Actuated Cycle Length (s)         | 50.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 57.5% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

# HCM Signalized Intersection Capacity Analysis

2074: J Street & 19th Street

4/6/2005



| Movement                          | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|-------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations               |      | ↑↑↑   |      |      |      |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0   |      |      |      |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor                 |      | 0.91  |      |      |      |      |      |      |      |      | 0.91 |      |
| Fr <sub>t</sub>                   |      | 0.97  |      |      |      |      |      |      |      |      | 1.00 |      |
| Fl <sub>t</sub> Protected         |      | 1.00  |      |      |      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (prot)                 |      | 4746  |      |      |      |      |      |      |      |      | 4850 |      |
| Fl <sub>t</sub> Permitted         |      | 1.00  |      |      |      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (perm)                 |      | 4746  |      |      |      |      |      |      |      |      | 4850 |      |
| Volume (vph)                      | 0    | 1006  | 301  | 0    | 0    | 0    | 0    | 0    | 0    | 105  | 282  | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 1006  | 301  | 0    | 0    | 0    | 0    | 0    | 0    | 105  | 282  | 0    |
| RTOR Reduction (vph)              | 0    | 108   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 36   | 0    |
| Lane Group Flow (vph)             | 0    | 1199  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 351  | 0    |
| Parking (#/hr)                    |      | 0     | 0    |      |      |      |      |      |      | 0    | 0    |      |
| Turn Type                         |      |       |      |      |      |      |      |      |      | Perm |      |      |
| Protected Phases                  |      | 2     |      |      |      |      |      |      |      |      | 4    |      |
| Permitted Phases                  |      |       |      |      |      |      |      |      |      | 4    |      |      |
| Actuated Green, G (s)             |      | 24.0  |      |      |      |      |      |      |      |      | 20.0 |      |
| Effective Green, g (s)            |      | 23.0  |      |      |      |      |      |      |      |      | 19.0 |      |
| Actuated g/C Ratio                |      | 0.46  |      |      |      |      |      |      |      |      | 0.38 |      |
| Clearance Time (s)                |      | 3.0   |      |      |      |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |      | 2183  |      |      |      |      |      |      |      |      | 1843 |      |
| v/s Ratio Prot                    |      | c0.25 |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm                    |      |       |      |      |      |      |      |      |      |      | 0.07 |      |
| v/c Ratio                         |      | 0.55  |      |      |      |      |      |      |      |      | 0.19 |      |
| Uniform Delay, d <sub>1</sub>     |      | 9.8   |      |      |      |      |      |      |      |      | 10.4 |      |
| Progression Factor                |      | 1.00  |      |      |      |      |      |      |      |      | 1.00 |      |
| Incremental Delay, d <sub>2</sub> |      | 1.0   |      |      |      |      |      |      |      |      | 0.2  |      |
| Delay (s)                         |      | 10.8  |      |      |      |      |      |      |      |      | 10.6 |      |
| Level of Service                  |      | B     |      |      |      |      |      |      |      |      | B    |      |
| Approach Delay (s)                |      | 10.8  |      |      | 0.0  |      |      | 0.0  |      |      | 10.6 |      |
| Approach LOS                      |      | B     |      |      | A    |      |      | A    |      |      | B    |      |

## Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.7  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.39  |                      |     |
| Actuated Cycle Length (s)         | 50.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 40.4% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 2088: L Street & 29th Street

4/6/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|-------|------|
| Lane Configurations    |      |      |      | ↙    | ↕     |      |      |      |      |      | ↕     | ↘    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      |      |      | 4.0  | 4.0   |      |      |      |      |      | 4.0   | 4.0  |
| Lane Util. Factor      |      |      |      | 1.00 | 0.95  |      |      |      |      |      | 0.86  | 0.86 |
| Fr't                   |      |      |      | 1.00 | 1.00  |      |      |      |      |      | 1.00  | 0.85 |
| Flt Protected          |      |      |      | 0.95 | 1.00  |      |      |      |      |      | 1.00  | 1.00 |
| Satd. Flow (prot)      |      |      |      | 1770 | 3539  |      |      |      |      |      | 4646  | 1226 |
| Flt Permitted          |      |      |      | 0.95 | 1.00  |      |      |      |      |      | 1.00  | 1.00 |
| Satd. Flow (perm)      |      |      |      | 1770 | 3539  |      |      |      |      |      | 4646  | 1226 |
| Volume (vph)           | 0    | 0    | 0    | 156  | 583   | 0    | 0    | 0    | 0    | 0    | 892   | 237  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 156  | 583   | 0    | 0    | 0    | 0    | 0    | 892   | 237  |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 46   | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 99   |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 110  | 583   | 0    | 0    | 0    | 0    | 0    | 892   | 138  |
| Parking (#/hr)         |      |      | 0    |      |       |      |      |      |      |      | 0     | 0    |
| Turn Type              |      |      |      | Perm |       |      |      |      |      |      |       | Perm |
| Protected Phases       |      |      |      |      | 6     |      |      |      |      |      |       | 4    |
| Permitted Phases       |      |      |      | 6    |       |      |      |      |      |      |       | 4    |
| Actuated Green, G (s)  |      |      |      | 31.0 | 31.0  |      |      |      |      |      | 33.0  | 33.0 |
| Effective Green, g (s) |      |      |      | 30.0 | 30.0  |      |      |      |      |      | 32.0  | 32.0 |
| Actuated g/C Ratio     |      |      |      | 0.43 | 0.43  |      |      |      |      |      | 0.46  | 0.46 |
| Clearance Time (s)     |      |      |      | 3.0  | 3.0   |      |      |      |      |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)     |      |      |      | 759  | 1517  |      |      |      |      |      | 2124  | 560  |
| v/s Ratio Prot         |      |      |      |      | c0.16 |      |      |      |      |      | c0.19 |      |
| v/s Ratio Perm         |      |      |      | 0.06 |       |      |      |      |      |      |       | 0.11 |
| v/c Ratio              |      |      |      | 0.14 | 0.38  |      |      |      |      |      | 0.42  | 0.25 |
| Uniform Delay, d1      |      |      |      | 12.2 | 13.7  |      |      |      |      |      | 12.8  | 11.6 |
| Progression Factor     |      |      |      | 0.22 | 0.45  |      |      |      |      |      | 0.89  | 0.38 |
| Incremental Delay, d2  |      |      |      | 0.4  | 0.7   |      |      |      |      |      | 0.5   | 0.9  |
| Delay (s)              |      |      |      | 3.1  | 6.8   |      |      |      |      |      | 11.9  | 5.3  |
| Level of Service       |      |      |      | A    | A     |      |      |      |      |      | B     | A    |
| Approach Delay (s)     |      | 0.0  |      |      | 6.0   |      |      | 0.0  |      |      | 10.5  |      |
| Approach LOS           |      | A    |      |      | A     |      |      | A    |      |      | B     |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 8.7   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.40  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 41.8% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
 2239: L Street & Alhambra

4/6/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      |      | ↕    |      |      | ↕    |      |      | ↕    | ↕    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      |      | 4.0  |      |      | 4.0  | 4.0  |
| Lane Util. Factor      |      |      |      |      | 1.00 |      |      | 1.00 |      |      | 1.00 | 1.00 |
| Frt                    |      |      |      |      | 0.99 |      |      | 0.96 |      |      | 1.00 | 0.85 |
| Flt Protected          |      |      |      |      | 1.00 |      |      | 0.99 |      |      | 0.99 | 1.00 |
| Satd. Flow (prot)      |      |      |      |      | 1647 |      |      | 1595 |      |      | 1851 | 1425 |
| Flt Permitted          |      |      |      |      | 1.00 |      |      | 0.85 |      |      | 0.85 | 1.00 |
| Satd. Flow (perm)      |      |      |      |      | 1647 |      |      | 1363 |      |      | 1584 | 1425 |
| Volume (vph)           | 0    | 0    | 0    | 13   | 130  | 16   | 119  | 418  | 234  | 71   | 479  | 337  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 13   | 130  | 16   | 119  | 418  | 234  | 71   | 479  | 337  |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 5    | 0    | 0    | 22   | 0    | 0    | 0    | 116  |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 154  | 0    | 0    | 749  | 0    | 0    | 550  | 221  |
| Parking (#/hr)         |      |      |      | 0    | 0    | 0    | 0    | 0    | 0    |      |      | 0    |
| Turn Type              |      |      |      | Perm |      |      | Perm |      |      | Perm |      |      |
| Protected Phases       |      |      |      |      | 6    |      |      | 8    |      |      | 4    |      |
| Permitted Phases       |      |      |      | 6    |      |      | 8    |      |      | 4    |      | 4    |
| Actuated Green, G (s)  |      |      |      |      | 17.0 |      |      | 47.0 |      |      | 47.0 | 47.0 |
| Effective Green, g (s) |      |      |      |      | 16.0 |      |      | 46.0 |      |      | 46.0 | 46.0 |
| Actuated g/C Ratio     |      |      |      |      | 0.23 |      |      | 0.66 |      |      | 0.66 | 0.66 |
| Clearance Time (s)     |      |      |      |      | 3.0  |      |      | 3.0  |      |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |      |      |      |      | 376  |      |      | 896  |      |      | 1041 | 936  |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      |      |      | 0.09 |      |      | 0.55 |      |      | 0.35 | 0.16 |
| v/c Ratio              |      |      |      |      | 0.41 |      |      | 0.84 |      |      | 0.53 | 0.24 |
| Uniform Delay, d1      |      |      |      |      | 23.0 |      |      | 9.1  |      |      | 6.3  | 4.9  |
| Progression Factor     |      |      |      |      | 1.00 |      |      | 1.00 |      |      | 0.89 | 1.55 |
| Incremental Delay, d2  |      |      |      |      | 3.3  |      |      | 9.1  |      |      | 1.8  | 0.5  |
| Delay (s)              |      |      |      |      | 26.2 |      |      | 18.2 |      |      | 7.4  | 8.1  |
| Level of Service       |      |      |      |      | C    |      |      | B    |      |      | A    | A    |
| Approach Delay (s)     |      | 0.0  |      |      | 26.2 |      |      | 18.2 |      |      | 7.6  |      |
| Approach LOS           |      | A    |      |      | C    |      |      | B    |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 13.8  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.73  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 90.5% | ICU Level of Service | E   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3426: L Street & 19th Street

4/6/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR                  |     |
|-----------------------------------|------|------|-------|------|------|------|------|------|------|------|------|----------------------|-----|
| Lane Configurations               |      |      |       |      | ↑↑   |      |      |      |      |      | ↑↑↑  |                      |     |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900                 |     |
| Total Lost time (s)               |      |      |       |      | 4.0  |      |      |      |      |      | 4.0  |                      |     |
| Lane Util. Factor                 |      |      |       |      | 0.95 |      |      |      |      |      | 0.91 |                      |     |
| Fr <sub>t</sub>                   |      |      |       |      | 1.00 |      |      |      |      |      | 0.99 |                      |     |
| Fl <sub>t</sub> Protected         |      |      |       |      | 1.00 |      |      |      |      |      | 1.00 |                      |     |
| Satd. Flow (prot)                 |      |      |       |      | 3352 |      |      |      |      |      | 4857 |                      |     |
| Fl <sub>t</sub> Permitted         |      |      |       |      | 1.00 |      |      |      |      |      | 1.00 |                      |     |
| Satd. Flow (perm)                 |      |      |       |      | 3352 |      |      |      |      |      | 4857 |                      |     |
| Volume (vph)                      | 0    | 0    | 0     | 60   | 888  | 0    | 0    | 0    | 0    | 0    | 530  | 46                   |     |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00                 |     |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 60   | 888  | 0    | 0    | 0    | 0    | 0    | 530  | 46                   |     |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 0    | 10   | 0    | 0    | 0    | 0    | 0    | 20   | 0                    |     |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 0    | 938  | 0    | 0    | 0    | 0    | 0    | 556  | 0                    |     |
| Parking (#/hr)                    |      | 0    | 0     | 0    | 0    |      |      |      |      | 0    | 0    | 0                    |     |
| Turn Type                         |      |      |       |      | Perm |      |      |      |      |      |      |                      |     |
| Protected Phases                  |      |      |       |      | 6    |      |      |      |      |      | 4    |                      |     |
| Permitted Phases                  |      |      |       |      | 6    |      |      |      |      |      |      |                      |     |
| Actuated Green, G (s)             |      |      |       |      | 25.0 |      |      |      |      |      | 19.0 |                      |     |
| Effective Green, g (s)            |      |      |       |      | 24.0 |      |      |      |      |      | 18.0 |                      |     |
| Actuated g/C Ratio                |      |      |       |      | 0.48 |      |      |      |      |      | 0.36 |                      |     |
| Clearance Time (s)                |      |      |       |      | 3.0  |      |      |      |      |      | 3.0  |                      |     |
| Lane Grp Cap (vph)                |      |      |       |      | 1609 |      |      |      |      |      | 1749 |                      |     |
| v/s Ratio Prot                    |      |      |       |      |      |      |      |      |      |      | 0.11 |                      |     |
| v/s Ratio Perm                    |      |      |       |      | 0.28 |      |      |      |      |      |      |                      |     |
| v/c Ratio                         |      |      |       |      | 0.58 |      |      |      |      |      | 0.32 |                      |     |
| Uniform Delay, d <sub>1</sub>     |      |      |       |      | 9.4  |      |      |      |      |      | 11.6 |                      |     |
| Progression Factor                |      |      |       |      | 0.41 |      |      |      |      |      | 0.82 |                      |     |
| Incremental Delay, d <sub>2</sub> |      |      |       |      | 1.0  |      |      |      |      |      | 0.4  |                      |     |
| Delay (s)                         |      |      |       |      | 4.9  |      |      |      |      |      | 9.9  |                      |     |
| Level of Service                  |      |      |       |      | A    |      |      |      |      |      | A    |                      |     |
| Approach Delay (s)                |      | 0.0  |       |      | 4.9  |      |      | 0.0  |      |      | 9.9  |                      |     |
| Approach LOS                      |      | A    |       |      | A    |      |      | A    |      |      | A    |                      |     |
| <b>Intersection Summary</b>       |      |      |       |      |      |      |      |      |      |      |      |                      |     |
| HCM Average Control Delay         |      |      | 6.8   |      |      |      |      |      |      |      |      | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      |      |      | 0.47  |      |      |      |      |      |      |      |      |                      |     |
| Actuated Cycle Length (s)         |      |      | 50.0  |      |      |      |      |      |      |      |      | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization |      |      | 44.2% |      |      |      |      |      |      |      |      | ICU Level of Service | A   |
| Analysis Period (min)             |      |      | 15    |      |      |      |      |      |      |      |      |                      |     |
| c Critical Lane Group             |      |      |       |      |      |      |      |      |      |      |      |                      |     |

# HCM Signalized Intersection Capacity Analysis

3427: L Street & 26th St

4/6/2005



| Movement                          | EBL  | EBT  | EBR  | WBL   | WBT  | WBR  | NBL  | NBT                  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|------|-------|------|------|------|----------------------|------|------|------|------|
| Lane Configurations               |      |      |      |       | ↕    |      |      | ↕                    |      |      | ↕    |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      |      |      |       | 4.0  |      |      | 4.0                  |      |      | 4.0  |      |
| Lane Util. Factor                 |      |      |      |       | 0.95 |      |      | 1.00                 |      |      | 1.00 |      |
| Frt                               |      |      |      |       | 0.99 |      |      | 1.00                 |      |      | 0.94 |      |
| Flt Protected                     |      |      |      |       | 1.00 |      |      | 0.98                 |      |      | 1.00 |      |
| Satd. Flow (prot)                 |      |      |      |       | 3341 |      |      | 1645                 |      |      | 1582 |      |
| Flt Permitted                     |      |      |      |       | 1.00 |      |      | 0.92                 |      |      | 1.00 |      |
| Satd. Flow (perm)                 |      |      |      |       | 3341 |      |      | 1538                 |      |      | 1582 |      |
| Volume (vph)                      | 0    | 0    | 0    | 15    | 956  | 37   | 22   | 36                   | 0    | 0    | 42   | 30   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0    | 15    | 956  | 37   | 22   | 36                   | 0    | 0    | 42   | 30   |
| RTOR Reduction (vph)              | 0    | 0    | 0    | 0     | 6    | 0    | 0    | 0                    | 0    | 0    | 20   | 0    |
| Lane Group Flow (vph)             | 0    | 0    | 0    | 0     | 1003 | 0    | 0    | 58                   | 0    | 0    | 52   | 0    |
| Parking (#/hr)                    |      |      |      | 0     | 0    | 0    | 0    | 0                    |      |      | 0    | 0    |
| Turn Type                         |      |      |      | Perm  |      |      | Perm |                      |      |      |      |      |
| Protected Phases                  |      |      |      |       | 8    |      |      | 2                    |      |      | 6    |      |
| Permitted Phases                  |      |      |      | 8     |      |      | 2    |                      |      |      |      |      |
| Actuated Green, G (s)             |      |      |      |       | 26.0 |      |      | 18.0                 |      |      | 18.0 |      |
| Effective Green, g (s)            |      |      |      |       | 25.0 |      |      | 17.0                 |      |      | 17.0 |      |
| Actuated g/C Ratio                |      |      |      |       | 0.50 |      |      | 0.34                 |      |      | 0.34 |      |
| Clearance Time (s)                |      |      |      |       | 3.0  |      |      | 3.0                  |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |      |      |      |       | 1671 |      |      | 523                  |      |      | 538  |      |
| v/s Ratio Prot                    |      |      |      |       |      |      |      |                      |      |      | 0.03 |      |
| v/s Ratio Perm                    |      |      |      |       | 0.30 |      |      | 0.04                 |      |      |      |      |
| v/c Ratio                         |      |      |      |       | 0.60 |      |      | 0.11                 |      |      | 0.10 |      |
| Uniform Delay, d1                 |      |      |      |       | 8.9  |      |      | 11.3                 |      |      | 11.3 |      |
| Progression Factor                |      |      |      |       | 1.00 |      |      | 0.72                 |      |      | 1.00 |      |
| Incremental Delay, d2             |      |      |      |       | 1.6  |      |      | 0.4                  |      |      | 0.4  |      |
| Delay (s)                         |      |      |      |       | 10.5 |      |      | 8.6                  |      |      | 11.6 |      |
| Level of Service                  |      |      |      |       | B    |      |      | A                    |      |      | B    |      |
| Approach Delay (s)                |      | 0.0  |      |       | 10.5 |      |      | 8.6                  |      |      | 11.6 |      |
| Approach LOS                      |      | A    |      |       | B    |      |      | A                    |      |      | B    |      |
| <b>Intersection Summary</b>       |      |      |      |       |      |      |      |                      |      |      |      |      |
| HCM Average Control Delay         |      |      |      | 10.5  |      |      |      | HCM Level of Service |      |      | B    |      |
| HCM Volume to Capacity ratio      |      |      |      | 0.40  |      |      |      |                      |      |      |      |      |
| Actuated Cycle Length (s)         |      |      |      | 50.0  |      |      |      | Sum of lost time (s) |      |      | 8.0  |      |
| Intersection Capacity Utilization |      |      |      | 44.5% |      |      |      | ICU Level of Service |      |      | A    |      |
| Analysis Period (min)             |      |      |      | 15    |      |      |      |                      |      |      |      |      |
| c Critical Lane Group             |      |      |      |       |      |      |      |                      |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
 3428: J Street & 29th St off ramp

4/6/2005



| Movement               | EBT   | EBR  | SBL   | SBT   | SWL2 | SWL  |
|------------------------|-------|------|-------|-------|------|------|
| Lane Configurations    | ↑↑↑   |      |       | ↑↑↑   |      | ↑↑   |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900  | 1900  | 1900 | 1900 |
| Total Lost time (s)    | 4.0   |      |       | 4.0   |      | 4.0  |
| Lane Util. Factor      | 0.91  |      |       | 0.91  |      | 0.97 |
| Fr't                   | 0.96  |      |       | 1.00  |      | 1.00 |
| Flt Protected          | 1.00  |      |       | 0.99  |      | 0.95 |
| Satd. Flow (prot)      | 4731  |      |       | 4891  |      | 3433 |
| Flt Permitted          | 1.00  |      |       | 0.99  |      | 0.95 |
| Satd. Flow (perm)      | 4731  |      |       | 4891  |      | 3433 |
| Volume (vph)           | 901   | 302  | 34    | 296   | 426  | 580  |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 901   | 302  | 34    | 296   | 426  | 580  |
| RTOR Reduction (vph)   | 86    | 0    | 0     | 0     | 0    | 189  |
| Lane Group Flow (vph)  | 1117  | 0    | 0     | 330   | 0    | 817  |
| Parking (#/hr)         | 0     | 0    |       | 0     |      |      |
| Turn Type              |       |      | Split |       | Perm |      |
| Protected Phases       | 2     |      | 8     | 8     |      | 4    |
| Permitted Phases       |       |      |       |       | 4    |      |
| Actuated Green, G (s)  | 22.0  |      |       | 17.0  |      | 22.0 |
| Effective Green, g (s) | 21.0  |      |       | 16.0  |      | 21.0 |
| Actuated g/C Ratio     | 0.30  |      |       | 0.23  |      | 0.30 |
| Clearance Time (s)     | 3.0   |      |       | 3.0   |      | 3.0  |
| Lane Grp Cap (vph)     | 1419  |      |       | 1118  |      | 1030 |
| v/s Ratio Prot         | c0.24 |      |       | c0.07 |      |      |
| v/s Ratio Perm         |       |      |       |       |      | 0.24 |
| v/c Ratio              | 0.79  |      |       | 0.30  |      | 0.79 |
| Uniform Delay, d1      | 22.5  |      |       | 22.3  |      | 22.5 |
| Progression Factor     | 0.51  |      |       | 1.00  |      | 1.00 |
| Incremental Delay, d2  | 4.0   |      |       | 0.7   |      | 6.3  |
| Delay (s)              | 15.6  |      |       | 23.0  |      | 28.8 |
| Level of Service       | B     |      |       | C     |      | C    |
| Approach Delay (s)     | 15.6  |      |       | 23.0  |      | 28.8 |
| Approach LOS           | B     |      |       | C     |      | C    |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 21.8  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.65  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 69.3% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

# HCM Signalized Intersection Capacity Analysis

3429: J Street & Alhambra

4/6/2005



| Movement               | EBL   | EBT   | EBR  | WBL   | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR   |
|------------------------|-------|-------|------|-------|------|------|------|------|------|------|------|-------|
| Lane Configurations    | ↖     | ↕     | ↗    | ↖     | ↕    | ↗    |      | ↕    |      |      | ↕    |       |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  |
| Total Lost time (s)    | 4.0   | 4.0   |      | 4.0   | 4.0  | 4.0  |      | 4.0  |      |      | 4.0  |       |
| Lane Util. Factor      | 1.00  | 0.95  |      | 0.95  | 0.95 | 1.00 |      | 0.95 |      |      | 0.95 |       |
| Fr't                   | 1.00  | 0.97  |      | 1.00  | 1.00 | 0.85 |      | 0.95 |      |      | 1.00 |       |
| Flt Protected          | 0.95  | 1.00  |      | 0.95  | 0.95 | 1.00 |      | 1.00 |      |      | 1.00 |       |
| Satd. Flow (prot)      | 1770  | 3262  |      | 1681  | 1681 | 1425 |      | 3197 |      |      | 3358 |       |
| Flt Permitted          | 0.95  | 1.00  |      | 0.95  | 0.95 | 1.00 |      | 1.00 |      |      | 0.94 |       |
| Satd. Flow (perm)      | 1770  | 3262  |      | 1681  | 1681 | 1425 |      | 3197 |      |      | 3173 |       |
| Volume (vph)           | 153   | 921   | 228  | 604   | 0    | 176  | 0    | 246  | 120  | 9    | 322  | 0     |
| Peak-hour factor, PHF  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  |
| Adj. Flow (vph)        | 153   | 921   | 228  | 604   | 0    | 176  | 0    | 246  | 120  | 9    | 322  | 0     |
| RTOR Reduction (vph)   | 0     | 31    | 0    | 0     | 0    | 136  | 0    | 85   | 0    | 0    | 0    | 0     |
| Lane Group Flow (vph)  | 153   | 1118  | 0    | 302   | 302  | 40   | 0    | 281  | 0    | 0    | 331  | 0     |
| Parking (#/hr)         |       | 0     | 0    |       |      | 0    |      | 0    | 0    |      | 0    |       |
| Turn Type              | Split |       |      | Split |      | Perm |      |      |      | Perm |      |       |
| Protected Phases       | 2     | 2     |      | 6     | 6    |      |      | 8    |      |      |      | 4     |
| Permitted Phases       |       |       |      |       |      | 6    |      |      |      | 4    |      |       |
| Actuated Green, G (s)  | 27.0  | 27.0  |      | 17.0  | 17.0 | 17.0 |      | 17.0 |      |      |      | 17.0  |
| Effective Green, g (s) | 26.0  | 26.0  |      | 16.0  | 16.0 | 16.0 |      | 16.0 |      |      |      | 16.0  |
| Actuated g/C Ratio     | 0.37  | 0.37  |      | 0.23  | 0.23 | 0.23 |      | 0.23 |      |      |      | 0.23  |
| Clearance Time (s)     | 3.0   | 3.0   |      | 3.0   | 3.0  | 3.0  |      | 3.0  |      |      |      | 3.0   |
| Lane Grp Cap (vph)     | 657   | 1212  |      | 384   | 384  | 326  |      | 731  |      |      |      | 725   |
| v/s Ratio Prot         | 0.09  | c0.34 |      | c0.18 | 0.18 |      |      | 0.09 |      |      |      |       |
| v/s Ratio Perm         |       |       |      |       |      | 0.03 |      |      |      |      |      | c0.10 |
| v/c Ratio              | 0.23  | 0.92  |      | 0.79  | 0.79 | 0.12 |      | 0.38 |      |      |      | 0.46  |
| Uniform Delay, d1      | 15.1  | 21.0  |      | 25.4  | 25.4 | 21.4 |      | 22.8 |      |      |      | 23.3  |
| Progression Factor     | 0.73  | 0.61  |      | 1.00  | 1.00 | 1.00 |      | 0.70 |      |      |      | 1.00  |
| Incremental Delay, d2  | 0.8   | 12.7  |      | 14.9  | 14.9 | 0.8  |      | 1.4  |      |      |      | 2.1   |
| Delay (s)              | 11.9  | 25.5  |      | 40.3  | 40.3 | 22.2 |      | 17.3 |      |      |      | 25.3  |
| Level of Service       | B     | C     |      | D     | D    | C    |      | B    |      |      |      | C     |
| Approach Delay (s)     |       | 23.9  |      |       | 36.2 |      |      | 17.3 |      |      |      | 25.3  |
| Approach LOS           |       | C     |      |       | D    |      |      | B    |      |      |      | C     |

## Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 26.7  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.76  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 74.9% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3435: N Street & 29th Street

4/6/2005



| Movement               | EBT   | EBR  | EBR2 | WBL2  | WBL   | WBT   | SBL2 | SBL   | SBT  | SBR  |
|------------------------|-------|------|------|-------|-------|-------|------|-------|------|------|
| Lane Configurations    | ↑     | ↔    |      |       | ↔     | ↑     |      | ↔     | ↑    |      |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900  | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    | 4.0   | 4.0  |      |       | 4.0   | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor      | 1.00  | 1.00 |      |       | 0.95  | 0.95  |      | 0.97  | 0.95 |      |
| Frt                    | 1.00  | 0.85 |      |       | 1.00  | 1.00  |      | 1.00  | 1.00 |      |
| Flt Protected          | 1.00  | 1.00 |      |       | 0.95  | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)      | 1676  | 1425 |      |       | 1681  | 1770  |      | 3433  | 3356 |      |
| Flt Permitted          | 1.00  | 1.00 |      |       | 0.95  | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)      | 1676  | 1425 |      |       | 1681  | 1770  |      | 3433  | 3356 |      |
| Volume (vph)           | 238   | 172  | 31   | 152   | 109   | 377   | 84   | 744   | 323  | 4    |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 238   | 172  | 31   | 152   | 109   | 377   | 84   | 744   | 323  | 4    |
| RTOR Reduction (vph)   | 0     | 9    | 0    | 0     | 0     | 0     | 0    | 0     | 1    | 0    |
| Lane Group Flow (vph)  | 238   | 194  | 0    | 0     | 261   | 377   | 0    | 828   | 326  | 0    |
| Parking (#/hr)         | 0     | 0    | 0    |       |       |       |      |       | 0    |      |
| Turn Type              |       | Perm |      | Split | Split |       | Perm | Perm  |      |      |
| Protected Phases       | 4     |      |      | 8     | 8     | 8     |      |       | 6    |      |
| Permitted Phases       |       | 4    |      |       |       |       | 6    | 6     |      |      |
| Actuated Green, G (s)  | 17.0  | 17.0 |      |       | 21.0  | 21.0  |      | 23.0  | 23.0 |      |
| Effective Green, g (s) | 16.0  | 16.0 |      |       | 20.0  | 20.0  |      | 22.0  | 22.0 |      |
| Actuated g/C Ratio     | 0.23  | 0.23 |      |       | 0.29  | 0.29  |      | 0.31  | 0.31 |      |
| Clearance Time (s)     | 3.0   | 3.0  |      |       | 3.0   | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     | 383   | 326  |      |       | 480   | 506   |      | 1079  | 1055 |      |
| v/s Ratio Prot         | c0.14 |      |      |       | 0.16  | c0.21 |      |       | 0.10 |      |
| v/s Ratio Perm         |       | 0.14 |      |       |       |       |      | c0.24 |      |      |
| v/c Ratio              | 0.62  | 0.59 |      |       | 0.54  | 0.75  |      | 0.77  | 0.31 |      |
| Uniform Delay, d1      | 24.3  | 24.1 |      |       | 21.1  | 22.7  |      | 21.7  | 18.2 |      |
| Progression Factor     | 0.90  | 0.90 |      |       | 1.20  | 1.18  |      | 0.75  | 0.79 |      |
| Incremental Delay, d2  | 7.3   | 7.6  |      |       | 2.4   | 5.6   |      | 4.8   | 0.7  |      |
| Delay (s)              | 29.2  | 29.3 |      |       | 27.7  | 32.4  |      | 21.1  | 15.1 |      |
| Level of Service       | C     | C    |      |       | C     | C     |      | C     | B    |      |
| Approach Delay (s)     | 29.3  |      |      |       |       | 30.5  |      |       | 19.4 |      |
| Approach LOS           | C     |      |      |       |       | C     |      |       | B    |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 24.5  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.72  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 66.0% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3436: Capitol & Alhambra

4/6/2005

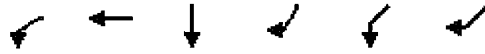


| Movement               | EBL   | EBT  | EBR   | WBL  | WBT  | WBR  | NBL  | NBT  | NBR   | SBL  | SBT  | SBR  |      |
|------------------------|-------|------|-------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations    |       | ↔    |       |      | ↔    |      | ↖    | ↗    | ↖     | ↖    | ↗    | ↖    |      |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 |      |
| Total Lost time (s)    |       | 4.0  |       |      | 4.0  |      | 4.0  | 4.0  | 4.0   | 4.0  | 4.0  | 4.0  |      |
| Lane Util. Factor      |       | 0.95 |       |      | 0.95 |      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 |      |
| Frt                    |       | 0.98 |       |      | 0.97 |      | 1.00 | 1.00 | 0.85  | 1.00 | 1.00 | 0.85 |      |
| Flt Protected          |       | 0.99 |       |      | 1.00 |      | 0.95 | 1.00 | 1.00  | 0.95 | 1.00 | 1.00 |      |
| Satd. Flow (prot)      |       | 3272 |       |      | 3270 |      | 1593 | 1676 | 1425  | 1593 | 1676 | 1425 |      |
| Flt Permitted          |       | 0.99 |       |      | 1.00 |      | 0.36 | 1.00 | 1.00  | 0.19 | 1.00 | 1.00 |      |
| Satd. Flow (perm)      |       | 3272 |       |      | 3270 |      | 607  | 1676 | 1425  | 313  | 1676 | 1425 |      |
| Volume (vph)           | 92    | 303  | 50    | 29   | 742  | 161  | 51   | 557  | 103   | 88   | 389  | 50   |      |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 |      |
| Adj. Flow (vph)        | 92    | 303  | 50    | 29   | 742  | 161  | 51   | 557  | 103   | 88   | 389  | 50   |      |
| RTOR Reduction (vph)   | 0     | 11   | 0     | 0    | 20   | 0    | 0    | 0    | 37    | 0    | 0    | 26   |      |
| Lane Group Flow (vph)  | 0     | 434  | 0     | 0    | 912  | 0    | 51   | 557  | 66    | 88   | 389  | 24   |      |
| Parking (#/hr)         | 0     | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    |      |
| Turn Type              | Split |      | Split |      |      |      | Perm |      | Perm  | Perm | Perm |      |      |
| Protected Phases       | 4     | 4    | 8     |      | 8    |      |      | 2    |       | 6    |      |      |      |
| Permitted Phases       |       |      |       |      |      |      | 2    |      | 2     | 6    | 6    |      |      |
| Actuated Green, G (s)  | 17.0  |      | 28.0  |      |      |      | 36.0 |      | 36.0  | 36.0 | 36.0 |      |      |
| Effective Green, g (s) | 16.0  |      | 27.0  |      |      |      | 35.0 |      | 35.0  | 35.0 | 35.0 |      |      |
| Actuated g/C Ratio     | 0.18  |      | 0.30  |      |      |      | 0.39 |      | 0.39  | 0.39 | 0.39 |      |      |
| Clearance Time (s)     | 3.0   |      | 3.0   |      |      |      | 3.0  |      | 3.0   | 3.0  | 3.0  |      |      |
| Lane Grp Cap (vph)     | 582   |      | 981   |      |      |      | 236  |      | 652   | 554  | 122  | 652  | 554  |
| v/s Ratio Prot         | c0.13 |      | c0.28 |      |      |      |      |      | c0.33 |      |      | 0.23 |      |
| v/s Ratio Perm         |       |      |       |      |      |      | 0.08 |      | 0.05  | 0.28 | 0.02 |      |      |
| v/c Ratio              | 0.75  |      | 0.93  |      |      |      | 0.22 |      | 0.85  | 0.12 | 0.72 | 0.60 | 0.04 |
| Uniform Delay, d1      | 35.1  |      | 30.6  |      |      |      | 18.3 |      | 25.2  | 17.6 | 23.4 | 21.9 | 17.1 |
| Progression Factor     | 1.00  |      | 1.00  |      |      |      | 1.00 |      | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2  | 8.5   |      | 16.1  |      |      |      | 2.1  |      | 13.4  | 0.4  | 30.7 | 4.0  | 0.1  |
| Delay (s)              | 43.5  |      | 46.7  |      |      |      | 20.4 |      | 38.6  | 18.1 | 54.0 | 25.9 | 17.2 |
| Level of Service       | D     |      | D     |      |      |      | C    |      | D     | B    | D    | C    | B    |
| Approach Delay (s)     | 43.5  |      | 46.7  |      |      |      |      |      | 34.3  |      |      | 29.8 |      |
| Approach LOS           | D     |      | D     |      |      |      |      |      | C     |      |      | C    |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 39.4  | HCM Level of Service | D    |
| HCM Volume to Capacity ratio      | 0.86  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 86.7% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3437: P Street & 29th St off ramp

4/6/2005



| Movement                          | WBL  | WBT   | SBT   | SBR  | SWL   | SWR  |
|-----------------------------------|------|-------|-------|------|-------|------|
| Lane Configurations               | ↙    | ↑↑    | ↑↑↔   |      | ↙↔    | ↗    |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900  | 1900 | 1900  | 1900 |
| Total Lost time (s)               | 4.0  | 4.0   | 4.0   |      | 4.0   | 4.0  |
| Lane Util. Factor                 | 1.00 | 0.95  | 0.91  |      | 0.97  | 0.91 |
| Fr <sub>t</sub>                   | 1.00 | 1.00  | 0.95  |      | 0.98  | 0.85 |
| Flt Protected                     | 0.95 | 1.00  | 1.00  |      | 0.96  | 1.00 |
| Satd. Flow (prot)                 | 1593 | 3362  | 4676  |      | 3394  | 1441 |
| Flt Permitted                     | 0.95 | 1.00  | 1.00  |      | 0.96  | 1.00 |
| Satd. Flow (perm)                 | 1593 | 3362  | 4676  |      | 3394  | 1441 |
| Volume (vph)                      | 81   | 720   | 291   | 140  | 536   | 344  |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)                   | 81   | 720   | 291   | 140  | 536   | 344  |
| RTOR Reduction (vph)              | 57   | 0     | 101   | 0    | 0     | 0    |
| Lane Group Flow (vph)             | 24   | 720   | 330   | 0    | 620   | 260  |
| Parking (#/hr)                    | 0    | 0     | 0     | 0    |       |      |
| Turn Type                         | Perm |       |       | Perm |       |      |
| Protected Phases                  |      | 6     | 7     |      | 8     |      |
| Permitted Phases                  | 6    |       |       |      |       | 8    |
| Actuated Green, G (s)             | 22.0 | 22.0  | 18.0  |      | 21.0  | 21.0 |
| Effective Green, g (s)            | 21.0 | 21.0  | 17.0  |      | 20.0  | 20.0 |
| Actuated g/C Ratio                | 0.30 | 0.30  | 0.24  |      | 0.29  | 0.29 |
| Clearance Time (s)                | 3.0  | 3.0   | 3.0   |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)                | 478  | 1009  | 1136  |      | 970   | 412  |
| v/s Ratio Prot                    |      | c0.21 | c0.07 |      | c0.18 |      |
| v/s Ratio Perm                    | 0.02 |       |       |      |       | 0.18 |
| v/c Ratio                         | 0.05 | 0.71  | 0.29  |      | 0.64  | 0.63 |
| Uniform Delay, d <sub>1</sub>     | 17.4 | 21.8  | 21.6  |      | 21.8  | 21.8 |
| Progression Factor                | 0.67 | 0.68  | 0.38  |      | 1.00  | 1.00 |
| Incremental Delay, d <sub>2</sub> | 0.2  | 3.9   | 0.6   |      | 3.2   | 7.2  |
| Delay (s)                         | 11.9 | 18.8  | 8.8   |      | 25.1  | 28.9 |
| Level of Service                  | B    | B     | A     |      | C     | C    |
| Approach Delay (s)                |      | 18.1  | 8.8   |      | 26.2  |      |
| Approach LOS                      |      | B     | A     |      | C     |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 19.6  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.56  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 57.5% | ICU Level of Service | B    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |



HCM Signalized Intersection Capacity Analysis  
 3438: P Street & Alhambra

4/6/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL   | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|-------|------|-------|------|------|
| Lane Configurations    |      |      |      |      | ↑↑↑  |      | ↖    | ↗     |      | ↖     | ↗    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      | 4.0  | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor      |      |      |      |      | 0.91 |      | 1.00 | 1.00  |      | 1.00  | 1.00 |      |
| Frnt                   |      |      |      |      | 0.97 |      | 1.00 | 0.95  |      | 1.00  | 0.96 |      |
| Flt Protected          |      |      |      |      | 1.00 |      | 0.95 | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)      |      |      |      |      | 4906 |      | 1770 | 1771  |      | 1770  | 1792 |      |
| Flt Permitted          |      |      |      |      | 1.00 |      | 0.95 | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)      |      |      |      |      | 4906 |      | 1770 | 1771  |      | 1770  | 1792 |      |
| Volume (vph)           | 0    | 0    | 0    | 75   | 808  | 240  | 91   | 355   | 173  | 263   | 253  | 86   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 75   | 808  | 240  | 91   | 355   | 173  | 263   | 253  | 86   |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 70   | 0    | 0    | 25    | 0    | 0     | 17   | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 1053 | 0    | 91   | 503   | 0    | 263   | 322  | 0    |
| Turn Type              |      |      |      | Perm |      |      | Prot |       | Prot |       |      |      |
| Protected Phases       |      |      |      |      | 6    |      | 3    | 8     |      | 7     | 4    |      |
| Permitted Phases       |      |      |      | 6    |      |      |      |       |      |       |      |      |
| Actuated Green, G (s)  |      |      |      |      | 19.0 |      | 10.0 | 27.0  |      | 15.0  | 32.0 |      |
| Effective Green, g (s) |      |      |      |      | 18.0 |      | 9.0  | 26.0  |      | 14.0  | 31.0 |      |
| Actuated g/C Ratio     |      |      |      |      | 0.26 |      | 0.13 | 0.37  |      | 0.20  | 0.44 |      |
| Clearance Time (s)     |      |      |      |      | 3.0  |      | 3.0  | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     |      |      |      |      | 1262 |      | 228  | 658   |      | 354   | 794  |      |
| v/s Ratio Prot         |      |      |      |      |      |      | 0.05 | c0.28 |      | c0.15 | 0.18 |      |
| v/s Ratio Perm         |      |      |      |      | 0.21 |      |      |       |      |       |      |      |
| v/c Ratio              |      |      |      |      | 0.83 |      | 0.40 | 0.76  |      | 0.74  | 0.41 |      |
| Uniform Delay, d1      |      |      |      |      | 24.6 |      | 28.0 | 19.3  |      | 26.3  | 13.2 |      |
| Progression Factor     |      |      |      |      | 1.00 |      | 1.00 | 1.00  |      | 0.72  | 0.69 |      |
| Incremental Delay, d2  |      |      |      |      | 6.6  |      | 5.1  | 8.2   |      | 9.2   | 1.0  |      |
| Delay (s)              |      |      |      |      | 31.2 |      | 33.2 | 27.5  |      | 28.1  | 10.2 |      |
| Level of Service       |      |      |      |      | C    |      | C    | C     |      | C     | B    |      |
| Approach Delay (s)     |      | 0.0  |      |      | 31.2 |      |      | 28.4  |      |       | 18.0 |      |
| Approach LOS           |      | A    |      |      | C    |      |      | C     |      |       | B    |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 27.1  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.78  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 76.3% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

3444: Q Street & 29th Street

4/6/2005



| Movement                          | EBL  | EBT   | EBR   | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT                  | SBR  |
|-----------------------------------|------|-------|-------|------|------|------|------|------|------|------|----------------------|------|
| Lane Configurations               |      | ↑↑    |       |      |      |      |      |      |      |      | ↑↑↑                  |      |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900                 | 1900 |
| Total Lost time (s)               |      | 4.0   |       |      |      |      |      |      |      |      | 4.0                  |      |
| Lane Util. Factor                 |      | 0.95  |       |      |      |      |      |      |      |      | 0.91                 |      |
| Frt                               |      | 0.97  |       |      |      |      |      |      |      |      | 1.00                 |      |
| Flt Protected                     |      | 1.00  |       |      |      |      |      |      |      |      | 0.99                 |      |
| Satd. Flow (prot)                 |      | 3425  |       |      |      |      |      |      |      |      | 5034                 |      |
| Flt Permitted                     |      | 1.00  |       |      |      |      |      |      |      |      | 0.99                 |      |
| Satd. Flow (perm)                 |      | 3425  |       |      |      |      |      |      |      |      | 5034                 |      |
| Volume (vph)                      | 0    | 429   | 117   | 0    | 0    | 0    | 0    | 0    | 0    | 189  | 730                  | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00                 | 1.00 |
| Adj. Flow (vph)                   | 0    | 429   | 117   | 0    | 0    | 0    | 0    | 0    | 0    | 189  | 730                  | 0    |
| RTOR Reduction (vph)              | 0    | 36    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 66                   | 0    |
| Lane Group Flow (vph)             | 0    | 510   | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 853                  | 0    |
| Turn Type                         |      |       |       |      |      |      |      |      |      | Perm |                      |      |
| Protected Phases                  |      | 2     |       |      |      |      |      |      |      |      | 4                    |      |
| Permitted Phases                  |      |       |       |      |      |      |      |      |      | 4    |                      |      |
| Actuated Green, G (s)             |      | 32.0  |       |      |      |      |      |      |      |      | 32.0                 |      |
| Effective Green, g (s)            |      | 31.0  |       |      |      |      |      |      |      |      | 31.0                 |      |
| Actuated g/C Ratio                |      | 0.44  |       |      |      |      |      |      |      |      | 0.44                 |      |
| Clearance Time (s)                |      | 3.0   |       |      |      |      |      |      |      |      | 3.0                  |      |
| Lane Grp Cap (vph)                |      | 1517  |       |      |      |      |      |      |      |      | 2229                 |      |
| v/s Ratio Prot                    |      | c0.15 |       |      |      |      |      |      |      |      |                      |      |
| v/s Ratio Perm                    |      |       |       |      |      |      |      |      |      |      | 0.17                 |      |
| v/c Ratio                         |      | 0.34  |       |      |      |      |      |      |      |      | 0.38                 |      |
| Uniform Delay, d1                 |      | 12.8  |       |      |      |      |      |      |      |      | 13.1                 |      |
| Progression Factor                |      | 1.00  |       |      |      |      |      |      |      |      | 0.30                 |      |
| Incremental Delay, d2             |      | 0.6   |       |      |      |      |      |      |      |      | 0.4                  |      |
| Delay (s)                         |      | 13.4  |       |      |      |      |      |      |      |      | 4.3                  |      |
| Level of Service                  |      | B     |       |      |      |      |      |      |      |      | A                    |      |
| Approach Delay (s)                |      | 13.4  |       |      | 0.0  |      |      | 0.0  |      |      | 4.3                  |      |
| Approach LOS                      |      | B     |       |      | A    |      |      | A    |      |      | A                    |      |
| <b>Intersection Summary</b>       |      |       |       |      |      |      |      |      |      |      |                      |      |
| HCM Average Control Delay         |      |       | 7.7   |      |      |      |      |      |      |      | HCM Level of Service | A    |
| HCM Volume to Capacity ratio      |      |       | 0.36  |      |      |      |      |      |      |      |                      |      |
| Actuated Cycle Length (s)         |      |       | 70.0  |      |      |      |      |      |      |      | Sum of lost time (s) | 8.0  |
| Intersection Capacity Utilization |      |       | 40.2% |      |      |      |      |      |      |      | ICU Level of Service | A    |
| Analysis Period (min)             |      |       | 15    |      |      |      |      |      |      |      |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 3467: N Street & Alhambra

4/6/2005



| Movement               | EBL   | EBT  | EBR  | WBL  | WBT  | WBR  | NBL   | NBT  | NBR   | SBL  | SBT  | SBR  |
|------------------------|-------|------|------|------|------|------|-------|------|-------|------|------|------|
| Lane Configurations    |       | ↕    |      |      | ↕    |      |       | ↕    |       |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 | 1900 | 1900 |
| Total Lost time (s)    |       | 4.0  |      |      | 4.0  |      |       | 4.0  |       |      | 4.0  |      |
| Lane Util. Factor      |       | 1.00 |      |      | 1.00 |      |       | 1.00 |       |      | 1.00 |      |
| Fr't                   |       | 0.96 |      |      | 0.99 |      |       | 0.99 |       |      | 0.99 |      |
| Flt Protected          |       | 0.98 |      |      | 0.99 |      |       | 1.00 |       |      | 1.00 |      |
| Satd. Flow (prot)      |       | 1575 |      |      | 1635 |      |       | 1649 |       |      | 1662 |      |
| Flt Permitted          |       | 0.74 |      |      | 0.85 |      |       | 0.97 |       |      | 0.98 |      |
| Satd. Flow (perm)      |       | 1196 |      |      | 1407 |      |       | 1609 |       |      | 1638 |      |
| Volume (vph)           | 221   | 160  | 170  | 55   | 189  | 30   | 25    | 496  | 61    | 12   | 415  | 24   |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 221   | 160  | 170  | 55   | 189  | 30   | 25    | 496  | 61    | 12   | 415  | 24   |
| RTOR Reduction (vph)   | 0     | 23   | 0    | 0    | 6    | 0    | 0     | 6    | 0     | 0    | 3    | 0    |
| Lane Group Flow (vph)  | 0     | 528  | 0    | 0    | 268  | 0    | 0     | 576  | 0     | 0    | 448  | 0    |
| Parking (#/hr)         | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0     | 0    | 0    | 0    |
| Turn Type              | Perm  |      | Perm |      | Perm |      | Perm  |      | Perm  |      | Perm |      |
| Protected Phases       | 4     |      | 8    |      | 8    |      | 2     |      | 2     |      | 6    |      |
| Permitted Phases       | 4     |      | 8    |      | 8    |      | 2     |      | 2     |      | 6    |      |
| Actuated Green, G (s)  | 35.0  |      | 35.0 |      | 35.0 |      | 29.0  |      | 29.0  |      | 29.0 |      |
| Effective Green, g (s) | 34.0  |      | 34.0 |      | 34.0 |      | 28.0  |      | 28.0  |      | 28.0 |      |
| Actuated g/C Ratio     | 0.49  |      | 0.49 |      | 0.49 |      | 0.40  |      | 0.40  |      | 0.40 |      |
| Clearance Time (s)     | 3.0   |      | 3.0  |      | 3.0  |      | 3.0   |      | 3.0   |      | 3.0  |      |
| Lane Grp Cap (vph)     | 581   |      | 683  |      | 683  |      | 644   |      | 644   |      | 655  |      |
| v/s Ratio Prot         |       |      |      |      |      |      |       |      |       |      |      |      |
| v/s Ratio Perm         | c0.44 |      | 0.19 |      | 0.19 |      | c0.36 |      | c0.36 |      | 0.27 |      |
| v/c Ratio              | 0.91  |      | 0.39 |      | 0.39 |      | 0.89  |      | 0.89  |      | 0.68 |      |
| Uniform Delay, d1      | 16.6  |      | 11.4 |      | 11.4 |      | 19.6  |      | 19.6  |      | 17.3 |      |
| Progression Factor     | 0.70  |      | 1.00 |      | 1.00 |      | 0.59  |      | 0.59  |      | 1.00 |      |
| Incremental Delay, d2  | 17.9  |      | 1.7  |      | 1.7  |      | 11.0  |      | 11.0  |      | 5.7  |      |
| Delay (s)              | 29.5  |      | 13.1 |      | 13.1 |      | 22.6  |      | 22.6  |      | 23.1 |      |
| Level of Service       | C     |      | B    |      | B    |      | C     |      | C     |      | C    |      |
| Approach Delay (s)     | 29.5  |      | 13.1 |      | 13.1 |      | 22.6  |      | 22.6  |      | 23.1 |      |
| Approach LOS           | C     |      | B    |      | B    |      | C     |      | C     |      | C    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 23.4  | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 0.90  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 97.3% | ICU Level of Service | F   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
5802: K Street & 29th Street

4/6/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑    | ↗    | ↖    | ↑     |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  | 4.0  | 4.0   |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00 | 1.00 | 1.00 | 1.00  |      |      |      |      |      | 0.91 |      |
| Frt                    |      | 1.00 | 0.85 | 1.00 | 1.00  |      |      |      |      |      | 0.96 |      |
| Flt Protected          |      | 1.00 | 1.00 | 0.95 | 1.00  |      |      |      |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 1863 | 1583 | 1770 | 1863  |      |      |      |      |      | 4843 |      |
| Flt Permitted          |      | 1.00 | 1.00 | 0.70 | 1.00  |      |      |      |      |      | 1.00 |      |
| Satd. Flow (perm)      |      | 1863 | 1583 | 1311 | 1863  |      |      |      |      |      | 4843 |      |
| Volume (vph)           | 0    | 82   | 230  | 202  | 612   | 0    | 0    | 0    | 0    | 88   | 701  | 326  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 82   | 230  | 202  | 612   | 0    | 0    | 0    | 0    | 88   | 701  | 326  |
| RTOR Reduction (vph)   | 0    | 0    | 32   | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 107  | 0    |
| Lane Group Flow (vph)  | 0    | 82   | 198  | 202  | 612   | 0    | 0    | 0    | 0    | 0    | 1008 | 0    |
| Turn Type              |      |      | Perm | Perm |       |      |      |      |      |      | Perm |      |
| Protected Phases       |      | 4    |      |      | 8     |      |      |      |      |      |      | 6    |
| Permitted Phases       |      |      | 4    | 8    |       |      |      |      |      |      | 6    |      |
| Actuated Green, G (s)  |      | 39.0 | 39.0 | 39.0 | 39.0  |      |      |      |      |      | 25.0 |      |
| Effective Green, g (s) |      | 38.0 | 38.0 | 38.0 | 38.0  |      |      |      |      |      | 24.0 |      |
| Actuated g/C Ratio     |      | 0.54 | 0.54 | 0.54 | 0.54  |      |      |      |      |      | 0.34 |      |
| Clearance Time (s)     |      | 3.0  | 3.0  | 3.0  | 3.0   |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 1011 | 859  | 712  | 1011  |      |      |      |      |      | 1660 |      |
| v/s Ratio Prot         |      | 0.04 |      |      | c0.33 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      | 0.12 | 0.15 |       |      |      |      |      |      | 0.21 |      |
| v/c Ratio              |      | 0.08 | 0.23 | 0.28 | 0.61  |      |      |      |      |      | 0.61 |      |
| Uniform Delay, d1      |      | 7.7  | 8.4  | 8.6  | 10.9  |      |      |      |      |      | 19.1 |      |
| Progression Factor     |      | 0.68 | 0.53 | 0.54 | 0.51  |      |      |      |      |      | 0.74 |      |
| Incremental Delay, d2  |      | 0.2  | 0.6  | 0.9  | 2.3   |      |      |      |      |      | 1.2  |      |
| Delay (s)              |      | 5.4  | 5.0  | 5.6  | 7.9   |      |      |      |      |      | 15.4 |      |
| Level of Service       |      | A    | A    | A    | A     |      |      |      |      |      | B    |      |
| Approach Delay (s)     |      | 5.1  |      |      | 7.3   |      |      | 0.0  |      |      | 15.4 |      |
| Approach LOS           |      | A    |      |      | A     |      |      | A    |      |      | B    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.0  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.61  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 61.5% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 5848: J Street & 30th Street

4/6/2005



| Movement               | EBL2 | EBL  | EBT   | WBR2 | NBL   | NBT  | NBR  |
|------------------------|------|------|-------|------|-------|------|------|
| Lane Configurations    |      | ↘    | ↕↕↕   | ↗    | ↘     | ↕↕   |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor      |      | 0.86 | 0.86  |      | 0.91  | 0.91 |      |
| Frt                    |      | 1.00 | 1.00  |      | 1.00  | 0.93 |      |
| Flt Protected          |      | 0.95 | 1.00  |      | 0.95  | 0.99 |      |
| Satd. Flow (prot)      |      | 1522 | 4646  |      | 1610  | 3153 |      |
| Flt Permitted          |      | 0.95 | 1.00  |      | 0.95  | 0.99 |      |
| Satd. Flow (perm)      |      | 1522 | 4646  |      | 1610  | 3153 |      |
| Volume (vph)           | 161  | 102  | 868   | 0    | 264   | 204  | 192  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 161  | 102  | 868   | 0    | 264   | 204  | 192  |
| RTOR Reduction (vph)   | 0    | 81   | 0     | 0    | 0     | 50   | 0    |
| Lane Group Flow (vph)  | 0    | 182  | 868   | 0    | 218   | 392  | 0    |
| Parking (#/hr)         |      |      | 0     | 0    |       |      | 0    |
| Turn Type              | Perm | Perm |       | Free | Perm  |      |      |
| Protected Phases       |      |      | 2     |      |       | 8    |      |
| Permitted Phases       | 2    | 2    |       | Free | 8     |      |      |
| Actuated Green, G (s)  |      | 33.0 | 33.0  |      | 31.0  | 31.0 |      |
| Effective Green, g (s) |      | 32.0 | 32.0  |      | 30.0  | 30.0 |      |
| Actuated g/C Ratio     |      | 0.46 | 0.46  |      | 0.43  | 0.43 |      |
| Clearance Time (s)     |      | 3.0  | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     |      | 696  | 2124  |      | 690   | 1351 |      |
| v/s Ratio Prot         |      |      | c0.19 |      |       |      |      |
| v/s Ratio Perm         |      | 0.12 |       |      | c0.14 | 0.12 |      |
| v/c Ratio              |      | 0.26 | 0.41  |      | 0.32  | 0.29 |      |
| Uniform Delay, d1      |      | 11.7 | 12.7  |      | 13.2  | 13.1 |      |
| Progression Factor     |      | 0.24 | 0.52  |      | 0.24  | 0.11 |      |
| Incremental Delay, d2  |      | 0.5  | 0.3   |      | 1.1   | 0.5  |      |
| Delay (s)              |      | 3.4  | 6.9   |      | 4.2   | 1.9  |      |
| Level of Service       |      | A    | A     |      | A     | A    |      |
| Approach Delay (s)     |      |      | 6.1   |      |       | 2.7  |      |
| Approach LOS           |      |      | A     |      |       | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 4.8   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.36  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 36.4% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
5849: L Street & 30th Street

4/6/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT   | WBR  | NBL                  | NBT   | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|-------|------|-------|------|----------------------|-------|------|------|------|------|
| Lane Configurations               |      |      |       |      | ↑↑↑   |      | ↗                    | ↖↑↑   |      |      |      |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 | 1900                 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      |      |       |      | 4.0   |      | 4.0                  | 4.0   |      |      |      |      |
| Lane Util. Factor                 |      |      |       |      | 0.91  |      | 0.86                 | 0.86  |      |      |      |      |
| Fr <sub>t</sub>                   |      |      |       |      | 0.97  |      | 1.00                 | 1.00  |      |      |      |      |
| Fl <sub>t</sub> Protected         |      |      |       |      | 1.00  |      | 0.95                 | 1.00  |      |      |      |      |
| Satd. Flow (prot)                 |      |      |       |      | 4919  |      | 1522                 | 4646  |      |      |      |      |
| Fl <sub>t</sub> Permitted         |      |      |       |      | 1.00  |      | 0.95                 | 1.00  |      |      |      |      |
| Satd. Flow (perm)                 |      |      |       |      | 4919  |      | 1522                 | 4646  |      |      |      |      |
| Volume (vph)                      | 0    | 0    | 0     | 0    | 439   | 122  | 288                  | 981   | 0    | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00                 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 0    | 439   | 122  | 288                  | 981   | 0    | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 0    | 40    | 0    | 145                  | 0     | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 0    | 521   | 0    | 143                  | 981   | 0    | 0    | 0    | 0    |
| Parking (#/hr)                    |      |      |       |      |       | 0    |                      | 0     |      |      |      |      |
| Turn Type                         |      |      |       |      |       |      | Perm                 |       |      |      |      |      |
| Protected Phases                  |      |      |       |      | 6     |      |                      | 8     |      |      |      |      |
| Permitted Phases                  |      |      |       |      |       |      | 8                    |       |      |      |      |      |
| Actuated Green, G (s)             |      |      |       |      | 30.0  |      | 34.0                 | 34.0  |      |      |      |      |
| Effective Green, g (s)            |      |      |       |      | 29.0  |      | 33.0                 | 33.0  |      |      |      |      |
| Actuated g/C Ratio                |      |      |       |      | 0.41  |      | 0.47                 | 0.47  |      |      |      |      |
| Clearance Time (s)                |      |      |       |      | 3.0   |      | 3.0                  | 3.0   |      |      |      |      |
| Lane Grp Cap (vph)                |      |      |       |      | 2038  |      | 718                  | 2190  |      |      |      |      |
| v/s Ratio Prot                    |      |      |       |      | c0.11 |      |                      | c0.21 |      |      |      |      |
| v/s Ratio Perm                    |      |      |       |      |       |      | 0.09                 |       |      |      |      |      |
| v/c Ratio                         |      |      |       |      | 0.26  |      | 0.20                 | 0.45  |      |      |      |      |
| Uniform Delay, d1                 |      |      |       |      | 13.4  |      | 10.8                 | 12.4  |      |      |      |      |
| Progression Factor                |      |      |       |      | 0.87  |      | 0.51                 | 0.63  |      |      |      |      |
| Incremental Delay, d2             |      |      |       |      | 0.3   |      | 0.4                  | 0.4   |      |      |      |      |
| Delay (s)                         |      |      |       |      | 11.9  |      | 5.9                  | 8.2   |      |      |      |      |
| Level of Service                  |      |      |       |      | B     |      | A                    | A     |      |      |      |      |
| Approach Delay (s)                |      | 0.0  |       |      | 11.9  |      |                      | 7.7   |      |      | 0.0  |      |
| Approach LOS                      |      | A    |       |      | B     |      |                      | A     |      |      | A    |      |
| <b>Intersection Summary</b>       |      |      |       |      |       |      |                      |       |      |      |      |      |
| HCM Average Control Delay         |      |      | 9.0   |      |       |      | HCM Level of Service |       |      |      | A    |      |
| HCM Volume to Capacity ratio      |      |      | 0.36  |      |       |      |                      |       |      |      |      |      |
| Actuated Cycle Length (s)         |      |      | 70.0  |      |       |      | Sum of lost time (s) |       |      |      | 8.0  |      |
| Intersection Capacity Utilization |      |      | 41.8% |      |       |      | ICU Level of Service |       |      |      | A    |      |
| Analysis Period (min)             |      |      | 15    |      |       |      |                      |       |      |      |      |      |
| c Critical Lane Group             |      |      |       |      |       |      |                      |       |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
5880: N Street & 30th Street

4/6/2005



| Movement               | EBL  | EBT   | WBT  | WBR  | NBL  | NBT  | NBR   | NEL2 | NEL   | NER  |
|------------------------|------|-------|------|------|------|------|-------|------|-------|------|
| Lane Configurations    | ↙    | ↑     | ↘    |      |      | ↑↑↑  |       |      | ↘↙    |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0  | 4.0   | 4.0  |      |      | 4.0  |       |      | 4.0   |      |
| Lane Util. Factor      | 1.00 | 1.00  | 1.00 |      |      | 0.91 |       |      | 0.97  |      |
| Frt                    | 1.00 | 1.00  | 0.99 |      |      | 0.98 |       |      | 0.99  |      |
| Flt Protected          | 0.95 | 1.00  | 1.00 |      |      | 0.99 |       |      | 0.96  |      |
| Satd. Flow (prot)      | 1770 | 1863  | 1836 |      |      | 4943 |       |      | 3410  |      |
| Flt Permitted          | 0.48 | 1.00  | 1.00 |      |      | 0.99 |       |      | 0.96  |      |
| Satd. Flow (perm)      | 891  | 1863  | 1836 |      |      | 4943 |       |      | 3410  |      |
| Volume (vph)           | 68   | 244   | 199  | 24   | 116  | 442  | 82    | 424  | 790   | 118  |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 68   | 244   | 199  | 24   | 116  | 442  | 82    | 424  | 790   | 118  |
| RTOR Reduction (vph)   | 0    | 0     | 6    | 0    | 0    | 28   | 0     | 0    | 0     | 0    |
| Lane Group Flow (vph)  | 68   | 244   | 217  | 0    | 0    | 612  | 0     | 0    | 1332  | 0    |
| Turn Type              | Perm |       |      | Perm |      |      | Split |      |       |      |
| Protected Phases       |      | 4     | 8    |      |      | 2    |       | 6    | 6     |      |
| Permitted Phases       | 4    |       |      |      | 2    |      |       |      |       |      |
| Actuated Green, G (s)  | 17.0 | 17.0  | 17.0 |      |      | 12.0 |       |      | 32.0  |      |
| Effective Green, g (s) | 16.0 | 16.0  | 16.0 |      |      | 11.0 |       |      | 31.0  |      |
| Actuated g/C Ratio     | 0.23 | 0.23  | 0.23 |      |      | 0.16 |       |      | 0.44  |      |
| Clearance Time (s)     | 3.0  | 3.0   | 3.0  |      |      | 3.0  |       |      | 3.0   |      |
| Lane Grp Cap (vph)     | 204  | 426   | 420  |      |      | 777  |       |      | 1510  |      |
| v/s Ratio Prot         |      | c0.13 | 0.12 |      |      |      |       |      | c0.39 |      |
| v/s Ratio Perm         | 0.08 |       |      |      |      | 0.12 |       |      |       |      |
| v/c Ratio              | 0.33 | 0.57  | 0.52 |      |      | 0.79 |       |      | 0.88  |      |
| Uniform Delay, d1      | 22.5 | 24.0  | 23.6 |      |      | 28.4 |       |      | 17.8  |      |
| Progression Factor     | 0.35 | 0.32  | 0.66 |      |      | 0.86 |       |      | 1.00  |      |
| Incremental Delay, d2  | 3.3  | 4.1   | 4.0  |      |      | 7.9  |       |      | 7.8   |      |
| Delay (s)              | 11.2 | 11.7  | 19.7 |      |      | 32.3 |       |      | 25.6  |      |
| Level of Service       | B    | B     | B    |      |      | C    |       |      | C     |      |
| Approach Delay (s)     |      | 11.6  | 19.7 |      |      | 32.3 |       |      | 25.6  |      |
| Approach LOS           |      | B     | B    |      |      | C    |       |      | C     |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 25.0  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.78  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 80.1% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
5882: P Street & 30th Street

4/6/2005



| Movement               | WBT   | WBR  | NBL2 | NBL   | NBT  |
|------------------------|-------|------|------|-------|------|
| Lane Configurations    | ↑↑↑   |      |      | ↗     | ↑↑↑  |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0   |      |      | 4.0   | 4.0  |
| Lane Util. Factor      | 0.91  |      |      | 1.00  | 0.91 |
| Frt                    | 0.96  |      |      | 1.00  | 1.00 |
| Flt Protected          | 1.00  |      |      | 0.95  | 1.00 |
| Satd. Flow (prot)      | 4883  |      |      | 1593  | 4916 |
| Flt Permitted          | 1.00  |      |      | 0.95  | 1.00 |
| Satd. Flow (perm)      | 4883  |      |      | 1593  | 4916 |
| Volume (vph)           | 612   | 221  | 308  | 138   | 447  |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 612   | 221  | 308  | 138   | 447  |
| RTOR Reduction (vph)   | 0     | 0    | 0    | 60    | 0    |
| Lane Group Flow (vph)  | 833   | 0    | 0    | 386   | 447  |
| Parking (#/hr)         |       | 0    | 0    | 0     | 0    |
| Turn Type              |       |      | Perm | Perm  |      |
| Protected Phases       | 6     |      |      |       | 8    |
| Permitted Phases       |       |      | 8    | 8     |      |
| Actuated Green, G (s)  | 27.0  |      |      | 37.0  | 37.0 |
| Effective Green, g (s) | 26.0  |      |      | 36.0  | 36.0 |
| Actuated g/C Ratio     | 0.37  |      |      | 0.51  | 0.51 |
| Clearance Time (s)     | 3.0   |      |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)     | 1814  |      |      | 819   | 2528 |
| v/s Ratio Prot         | c0.17 |      |      |       | 0.09 |
| v/s Ratio Perm         |       |      |      | c0.24 |      |
| v/c Ratio              | 0.46  |      |      | 0.47  | 0.18 |
| Uniform Delay, d1      | 16.7  |      |      | 10.9  | 9.1  |
| Progression Factor     | 0.23  |      |      | 1.00  | 1.00 |
| Incremental Delay, d2  | 0.5   |      |      | 1.9   | 0.2  |
| Delay (s)              | 4.4   |      |      | 12.8  | 9.2  |
| Level of Service       | A     |      |      | B     | A    |
| Approach Delay (s)     | 4.4   |      |      |       | 11.0 |
| Approach LOS           | A     |      |      |       | B    |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 7.8   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.47  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 48.1% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
5886: Capitol & 30th Street

4/6/2005



| Movement               | EBL   | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|-------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    | ↙     | ↕    |      |      | ↕     |      |      | ↕    |      |      |      |      |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0   | 4.0  |      |      | 4.0   |      |      | 4.0  |      |      |      |      |
| Lane Util. Factor      | 1.00  | 0.95 |      |      | 0.95  |      |      | 0.91 |      |      |      |      |
| Fr't                   | 1.00  | 1.00 |      |      | 0.95  |      |      | 0.98 |      |      |      |      |
| Flt Protected          | 0.95  | 1.00 |      |      | 1.00  |      |      | 1.00 |      |      |      |      |
| Satd. Flow (prot)      | 1770  | 3539 |      |      | 3374  |      |      | 4980 |      |      |      |      |
| Flt Permitted          | 0.95  | 1.00 |      |      | 1.00  |      |      | 1.00 |      |      |      |      |
| Satd. Flow (perm)      | 1770  | 3539 |      |      | 3374  |      |      | 4980 |      |      |      |      |
| Volume (vph)           | 125   | 234  | 0    | 0    | 472   | 213  | 139  | 1226 | 165  | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 125   | 234  | 0    | 0    | 472   | 213  | 139  | 1226 | 165  | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0     | 0    | 0    | 0    | 74    | 0    | 0    | 22   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 125   | 234  | 0    | 0    | 611   | 0    | 0    | 1508 | 0    | 0    | 0    | 0    |
| Turn Type              | Prot  |      |      | Perm |       |      |      |      |      |      |      |      |
| Protected Phases       | 7     | 4    |      |      | 8     |      |      | 2    |      |      |      |      |
| Permitted Phases       |       |      |      |      |       |      |      | 2    |      |      |      |      |
| Actuated Green, G (s)  | 11.0  | 35.0 |      |      | 21.0  |      |      | 29.0 |      |      |      |      |
| Effective Green, g (s) | 10.0  | 34.0 |      |      | 20.0  |      |      | 28.0 |      |      |      |      |
| Actuated g/C Ratio     | 0.14  | 0.49 |      |      | 0.29  |      |      | 0.40 |      |      |      |      |
| Clearance Time (s)     | 3.0   | 3.0  |      |      | 3.0   |      |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)     | 253   | 1719 |      |      | 964   |      |      | 1992 |      |      |      |      |
| v/s Ratio Prot         | c0.07 | 0.07 |      |      | c0.18 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |       |      |      |      |       |      |      | 0.30 |      |      |      |      |
| v/c Ratio              | 0.49  | 0.14 |      |      | 0.63  |      |      | 0.76 |      |      |      |      |
| Uniform Delay, d1      | 27.7  | 9.9  |      |      | 21.8  |      |      | 18.1 |      |      |      |      |
| Progression Factor     | 0.97  | 1.07 |      |      | 1.00  |      |      | 0.65 |      |      |      |      |
| Incremental Delay, d2  | 6.4   | 0.2  |      |      | 3.2   |      |      | 1.9  |      |      |      |      |
| Delay (s)              | 33.2  | 10.8 |      |      | 25.0  |      |      | 13.7 |      |      |      |      |
| Level of Service       | C     | B    |      |      | C     |      |      | B    |      |      |      |      |
| Approach Delay (s)     |       | 18.6 |      |      | 25.0  |      |      | 13.7 |      |      | 0.0  |      |
| Approach LOS           |       | B    |      |      | C     |      |      | B    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 17.4  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.67  |                      |      |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 67.0% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 5888: Capitol & 29th Street

4/6/2005



| Movement                  | EBL  | EBT  | EBR  | WBL   | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------------|------|------|------|-------|------|------|------|------|------|------|------|------|
| Lane Configurations       |      | ↑↑   |      | ↖     | ↑↑   |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |      | 4.0  |      | 4.0   | 4.0  |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor         |      | 0.95 |      | 1.00  | 0.95 |      |      |      |      |      | 0.91 |      |
| Fr <sub>t</sub>           |      | 0.92 |      | 1.00  | 1.00 |      |      |      |      |      | 0.99 |      |
| Fl <sub>t</sub> Protected |      | 1.00 |      | 0.95  | 1.00 |      |      |      |      |      | 0.99 |      |
| Satd. Flow (prot)         |      | 3103 |      | 1770  | 3539 |      |      |      |      |      | 4826 |      |
| Fl <sub>t</sub> Permitted |      | 1.00 |      | 0.48  | 1.00 |      |      |      |      |      | 0.99 |      |
| Satd. Flow (perm)         |      | 3103 |      | 888   | 3539 |      |      |      |      |      | 4826 |      |
| Volume (vph)              | 0    | 214  | 227  | 162   | 482  | 0    | 0    | 0    | 0    | 147  | 772  | 73   |
| Peak-hour factor, PHF     | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 0    | 214  | 227  | 162   | 482  | 0    | 0    | 0    | 0    | 147  | 772  | 73   |
| RTOR Reduction (vph)      | 0    | 43   | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 13   | 0    |
| Lane Group Flow (vph)     | 0    | 398  | 0    | 162   | 482  | 0    | 0    | 0    | 0    | 0    | 979  | 0    |
| Parking (#/hr)            |      | 0    | 0    |       |      |      |      |      |      |      | 0    | 0    |
| Turn Type                 |      |      |      | Perm  |      |      |      |      |      |      | Perm |      |
| Protected Phases          |      | 4    |      |       | 8    |      |      |      |      |      |      | 6    |
| Permitted Phases          |      |      |      | 8     |      |      |      |      |      | 6    |      |      |
| Actuated Green, G (s)     |      | 35.0 |      | 35.0  | 35.0 |      |      |      |      |      | 29.0 |      |
| Effective Green, g (s)    |      | 34.0 |      | 34.0  | 34.0 |      |      |      |      |      | 28.0 |      |
| Actuated g/C Ratio        |      | 0.49 |      | 0.49  | 0.49 |      |      |      |      |      | 0.40 |      |
| Clearance Time (s)        |      | 3.0  |      | 3.0   | 3.0  |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)        |      | 1507 |      | 431   | 1719 |      |      |      |      |      | 1930 |      |
| v/s Ratio Prot            |      | 0.13 |      |       | 0.14 |      |      |      |      |      |      |      |
| v/s Ratio Perm            |      |      |      | c0.18 |      |      |      |      |      |      | 0.20 |      |
| v/c Ratio                 |      | 0.26 |      | 0.38  | 0.28 |      |      |      |      |      | 0.51 |      |
| Uniform Delay, d1         |      | 10.6 |      | 11.3  | 10.7 |      |      |      |      |      | 15.8 |      |
| Progression Factor        |      | 0.37 |      | 0.28  | 0.30 |      |      |      |      |      | 0.34 |      |
| Incremental Delay, d2     |      | 0.3  |      | 1.9   | 0.3  |      |      |      |      |      | 0.9  |      |
| Delay (s)                 |      | 4.2  |      | 5.1   | 3.6  |      |      |      |      |      | 6.3  |      |
| Level of Service          |      | A    |      | A     | A    |      |      |      |      |      | A    |      |
| Approach Delay (s)        |      | 4.2  |      |       | 3.9  |      |      | 0.0  |      |      | 6.3  |      |
| Approach LOS              |      | A    |      |       | A    |      |      | A    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 5.1   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.43  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 67.0% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
5890: Capitol & 26th St

4/6/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|-------|------|------|------|------|
| Lane Configurations    |      |      |      |      |       |      |      |       |      |      |      |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0  | 4.0  |      | 4.0  | 4.0   |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor      | 1.00 | 1.00 |      | 1.00 | 1.00  |      |      | 1.00  |      |      | 1.00 |      |
| Frt                    | 1.00 | 1.00 |      | 1.00 | 0.99  |      |      | 0.97  |      |      | 0.99 |      |
| Flt Protected          | 0.95 | 1.00 |      | 0.95 | 1.00  |      |      | 0.99  |      |      | 0.98 |      |
| Satd. Flow (prot)      | 1770 | 1671 |      | 1770 | 1668  |      |      | 1613  |      |      | 1624 |      |
| Flt Permitted          | 0.29 | 1.00 |      | 0.48 | 1.00  |      |      | 0.97  |      |      | 0.92 |      |
| Satd. Flow (perm)      | 538  | 1671 |      | 893  | 1668  |      |      | 1582  |      |      | 1531 |      |
| Volume (vph)           | 10   | 380  | 8    | 5    | 596   | 22   | 10   | 41    | 15   | 16   | 22   | 4    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 10   | 380  | 8    | 5    | 596   | 22   | 10   | 41    | 15   | 16   | 22   | 4    |
| RTOR Reduction (vph)   | 0    | 1    | 0    | 0    | 3     | 0    | 0    | 10    | 0    | 0    | 3    | 0    |
| Lane Group Flow (vph)  | 10   | 387  | 0    | 5    | 615   | 0    | 0    | 56    | 0    | 0    | 39   | 0    |
| Parking (#/hr)         |      | 0    | 0    |      | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      |      | Perm |       |      | Perm |       |      | Perm |      |      |
| Protected Phases       |      | 4    |      |      | 8     |      |      | 2     |      |      | 6    |      |
| Permitted Phases       | 4    |      |      | 8    |       |      | 2    |       |      | 6    |      |      |
| Actuated Green, G (s)  | 27.0 | 27.0 |      | 27.0 | 27.0  |      |      | 17.0  |      |      | 17.0 |      |
| Effective Green, g (s) | 26.0 | 26.0 |      | 26.0 | 26.0  |      |      | 16.0  |      |      | 16.0 |      |
| Actuated g/C Ratio     | 0.52 | 0.52 |      | 0.52 | 0.52  |      |      | 0.32  |      |      | 0.32 |      |
| Clearance Time (s)     | 3.0  | 3.0  |      | 3.0  | 3.0   |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)     | 280  | 869  |      | 464  | 867   |      |      | 506   |      |      | 490  |      |
| v/s Ratio Prot         |      | 0.23 |      |      | c0.37 |      |      |       |      |      |      |      |
| v/s Ratio Perm         | 0.02 |      |      | 0.01 |       |      |      | c0.04 |      |      | 0.03 |      |
| v/c Ratio              | 0.04 | 0.44 |      | 0.01 | 0.71  |      |      | 0.11  |      |      | 0.08 |      |
| Uniform Delay, d1      | 5.9  | 7.5  |      | 5.8  | 9.1   |      |      | 12.0  |      |      | 11.9 |      |
| Progression Factor     | 1.00 | 1.00 |      | 1.00 | 1.00  |      |      | 1.00  |      |      | 0.68 |      |
| Incremental Delay, d2  | 0.2  | 1.6  |      | 0.0  | 4.9   |      |      | 0.4   |      |      | 0.3  |      |
| Delay (s)              | 6.1  | 9.1  |      | 5.8  | 14.0  |      |      | 12.4  |      |      | 8.4  |      |
| Level of Service       | A    | A    |      | A    | B     |      |      | B     |      |      | A    |      |
| Approach Delay (s)     |      | 9.1  |      |      | 13.9  |      |      | 12.4  |      |      | 8.4  |      |
| Approach LOS           |      | A    |      |      | B     |      |      | B     |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.9  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.48  |                      |     |
| Actuated Cycle Length (s)         | 50.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 44.1% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
6481: J Street & 28th Street

4/6/2005



| Movement                          | EBL  | EBT   | EBR  | WBL  | WBT  | WBR                  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |  |
|-----------------------------------|------|-------|------|------|------|----------------------|------|------|------|------|------|------|--|
| Lane Configurations               |      | ↑↑↑   |      |      |      |                      |      | ↑    |      |      | ↑    |      |  |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900 | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |  |
| Total Lost time (s)               |      | 4.0   |      |      |      |                      |      | 4.0  |      |      | 4.0  |      |  |
| Lane Util. Factor                 |      | 0.91  |      |      |      |                      |      | 1.00 |      |      | 1.00 |      |  |
| Fr <sub>t</sub>                   |      | 1.00  |      |      |      |                      |      | 0.92 |      |      | 1.00 |      |  |
| Fl <sub>t</sub> Protected         |      | 1.00  |      |      |      |                      |      | 1.00 |      |      | 0.99 |      |  |
| Satd. Flow (prot)                 |      | 4890  |      |      |      |                      |      | 1546 |      |      | 1654 |      |  |
| Fl <sub>t</sub> Permitted         |      | 1.00  |      |      |      |                      |      | 1.00 |      |      | 0.93 |      |  |
| Satd. Flow (perm)                 |      | 4890  |      |      |      |                      |      | 1546 |      |      | 1561 |      |  |
| Volume (vph)                      | 34   | 1135  | 31   | 0    | 0    | 0                    | 0    | 82   | 111  | 14   | 37   | 0    |  |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |  |
| Adj. Flow (vph)                   | 34   | 1135  | 31   | 0    | 0    | 0                    | 0    | 82   | 111  | 14   | 37   | 0    |  |
| RTOR Reduction (vph)              | 0    | 4     | 0    | 0    | 0    | 0                    | 0    | 28   | 0    | 0    | 0    | 0    |  |
| Lane Group Flow (vph)             | 0    | 1196  | 0    | 0    | 0    | 0                    | 0    | 165  | 0    | 0    | 51   | 0    |  |
| Parking (#/hr)                    | 0    | 0     | 0    |      |      |                      |      | 0    | 0    | 0    | 0    |      |  |
| Turn Type                         | Perm |       |      |      |      |                      | Perm |      |      |      |      |      |  |
| Protected Phases                  |      | 4     |      |      |      |                      |      | 2    |      | 6    |      |      |  |
| Permitted Phases                  | 4    |       |      |      |      |                      | 6    |      |      |      |      |      |  |
| Actuated Green, G (s)             |      | 35.0  |      |      |      |                      |      | 29.0 |      | 29.0 |      |      |  |
| Effective Green, g (s)            |      | 34.0  |      |      |      |                      |      | 28.0 |      | 28.0 |      |      |  |
| Actuated g/C Ratio                |      | 0.49  |      |      |      |                      |      | 0.40 |      | 0.40 |      |      |  |
| Clearance Time (s)                |      | 3.0   |      |      |      |                      |      | 3.0  |      | 3.0  |      |      |  |
| Lane Grp Cap (vph)                |      | 2375  |      |      |      |                      |      | 618  |      | 624  |      |      |  |
| v/s Ratio Prot                    |      |       |      |      |      |                      |      | 0.11 |      |      |      |      |  |
| v/s Ratio Perm                    |      | 0.24  |      |      |      |                      |      |      |      | 0.03 |      |      |  |
| v/c Ratio                         |      | 0.50  |      |      |      |                      |      | 0.27 |      | 0.08 |      |      |  |
| Uniform Delay, d <sub>1</sub>     |      | 12.3  |      |      |      |                      |      | 14.1 |      | 13.0 |      |      |  |
| Progression Factor                |      | 1.00  |      |      |      |                      |      | 0.85 |      | 1.00 |      |      |  |
| Incremental Delay, d <sub>2</sub> |      | 0.8   |      |      |      |                      |      | 1.0  |      | 0.3  |      |      |  |
| Delay (s)                         |      | 13.0  |      |      |      |                      |      | 13.0 |      | 13.3 |      |      |  |
| Level of Service                  |      | B     |      |      |      |                      |      | B    |      | B    |      |      |  |
| Approach Delay (s)                |      | 13.0  |      |      |      | 0.0                  |      | 13.0 |      | 13.3 |      |      |  |
| Approach LOS                      |      | B     |      |      |      | A                    |      | B    |      | B    |      |      |  |
| <b>Intersection Summary</b>       |      |       |      |      |      |                      |      |      |      |      |      |      |  |
| HCM Average Control Delay         |      | 13.0  |      |      |      | HCM Level of Service |      |      |      | B    |      |      |  |
| HCM Volume to Capacity ratio      |      | 0.40  |      |      |      |                      |      |      |      |      |      |      |  |
| Actuated Cycle Length (s)         |      | 70.0  |      |      |      | Sum of lost time (s) |      |      |      | 8.0  |      |      |  |
| Intersection Capacity Utilization |      | 44.2% |      |      |      | ICU Level of Service |      |      |      | A    |      |      |  |
| Analysis Period (min)             |      | 15    |      |      |      |                      |      |      |      |      |      |      |  |
| c Critical Lane Group             |      |       |      |      |      |                      |      |      |      |      |      |      |  |

HCM Signalized Intersection Capacity Analysis  
6482: K Street & 28th Street

4/6/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↕    | ↗    |      | ↕    | ↗    |      | ↕    | ↗    |      | ↕    | ↗    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  |      | 4.0  | 4.0  |      | 4.0  | 4.0  |      | 4.0  | 4.0  |
| Lane Util. Factor      |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |
| Frt                    |      | 1.00 | 0.85 |      | 1.00 | 0.85 |      | 1.00 | 0.85 |      | 1.00 | 0.85 |
| Flt Protected          |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 0.99 | 1.00 |      | 0.99 | 1.00 |
| Satd. Flow (prot)      |      | 1673 | 1425 |      | 1675 | 1425 |      | 1652 | 1425 |      | 1656 | 1425 |
| Flt Permitted          |      | 0.98 | 1.00 |      | 0.99 | 1.00 |      | 0.89 | 1.00 |      | 0.92 | 1.00 |
| Satd. Flow (perm)      |      | 1647 | 1425 |      | 1665 | 1425 |      | 1498 | 1425 |      | 1536 | 1425 |
| Volume (vph)           | 8    | 213  | 14   | 15   | 634  | 110  | 55   | 129  | 71   | 24   | 74   | 8    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 8    | 213  | 14   | 15   | 634  | 110  | 55   | 129  | 71   | 24   | 74   | 8    |
| RTOR Reduction (vph)   | 0    | 0    | 5    | 0    | 0    | 30   | 0    | 0    | 52   | 0    | 0    | 6    |
| Lane Group Flow (vph)  | 0    | 221  | 9    | 0    | 649  | 80   | 0    | 184  | 19   | 0    | 98   | 2    |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      | Perm | Perm |      | Perm | Perm |      | Perm | Perm |      | Perm |
| Protected Phases       |      | 4    |      |      | 8    |      |      | 2    |      |      | 6    |      |
| Permitted Phases       | 4    |      | 4    | 8    |      | 8    | 2    |      | 2    | 6    |      | 6    |
| Actuated Green, G (s)  |      | 44.0 | 44.0 |      | 44.0 | 44.0 |      | 20.0 | 20.0 |      | 20.0 | 20.0 |
| Effective Green, g (s) |      | 43.0 | 43.0 |      | 43.0 | 43.0 |      | 19.0 | 19.0 |      | 19.0 | 19.0 |
| Actuated g/C Ratio     |      | 0.61 | 0.61 |      | 0.61 | 0.61 |      | 0.27 | 0.27 |      | 0.27 | 0.27 |
| Clearance Time (s)     |      | 3.0  | 3.0  |      | 3.0  | 3.0  |      | 3.0  | 3.0  |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |      | 1012 | 875  |      | 1023 | 875  |      | 407  | 387  |      | 417  | 387  |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      | 0.13 | 0.01 |      | 0.39 | 0.06 |      | 0.12 | 0.01 |      | 0.06 | 0.00 |
| v/c Ratio              |      | 0.22 | 0.01 |      | 0.63 | 0.09 |      | 0.45 | 0.05 |      | 0.24 | 0.01 |
| Uniform Delay, d1      |      | 6.0  | 5.2  |      | 8.5  | 5.5  |      | 21.2 | 18.8 |      | 19.8 | 18.6 |
| Progression Factor     |      | 1.00 | 1.00 |      | 0.57 | 0.64 |      | 0.94 | 1.41 |      | 0.93 | 0.88 |
| Incremental Delay, d2  |      | 0.5  | 0.0  |      | 2.4  | 0.2  |      | 3.3  | 0.2  |      | 1.3  | 0.0  |
| Delay (s)              |      | 6.5  | 5.3  |      | 7.2  | 3.7  |      | 23.3 | 26.7 |      | 19.8 | 16.3 |
| Level of Service       |      | A    | A    |      | A    | A    |      | C    | C    |      | B    | B    |
| Approach Delay (s)     |      | 6.4  |      |      | 6.7  |      |      | 24.2 |      |      | 19.6 |      |
| Approach LOS           |      | A    |      |      | A    |      |      | C    |      |      | B    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.0  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.58  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 70.5% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6483: L Street & 28th Street

4/6/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT  | WBR  | NBL                  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|-------|------|------|------|----------------------|------|------|------|------|------|
| Lane Configurations               |      |      |       |      | ↕    |      |                      | ↕    |      |      | ↕    |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      |      |       |      | 4.0  |      |                      | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor                 |      |      |       |      | 0.95 |      |                      | 1.00 |      |      | 1.00 |      |
| Frt                               |      |      |       |      | 0.99 |      |                      | 1.00 |      |      | 0.97 |      |
| Flt Protected                     |      |      |       |      | 1.00 |      |                      | 0.97 |      |      | 1.00 |      |
| Satd. Flow (prot)                 |      |      |       |      | 3316 |      |                      | 1630 |      |      | 1628 |      |
| Flt Permitted                     |      |      |       |      | 1.00 |      |                      | 0.77 |      |      | 1.00 |      |
| Satd. Flow (perm)                 |      |      |       |      | 3316 |      |                      | 1293 |      |      | 1628 |      |
| Volume (vph)                      | 0    | 0    | 0     | 23   | 794  | 74   | 183                  | 140  | 0    | 0    | 85   | 23   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 23   | 794  | 74   | 183                  | 140  | 0    | 0    | 85   | 23   |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 0    | 10   | 0    | 0                    | 0    | 0    | 0    | 12   | 0    |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 0    | 881  | 0    | 0                    | 323  | 0    | 0    | 96   | 0    |
| Parking (#/hr)                    | 0    | 0    | 0     | 0    | 0    | 0    | 0                    | 0    | 0    | 0    | 0    | 0    |
| Turn Type                         |      |      |       | Perm |      |      | Perm                 |      |      |      |      |      |
| Protected Phases                  |      |      |       |      | 6    |      |                      | 8    |      |      | 4    |      |
| Permitted Phases                  |      |      |       | 6    |      |      | 8                    |      |      |      |      |      |
| Actuated Green, G (s)             |      |      |       |      | 31.0 |      |                      | 33.0 |      |      | 33.0 |      |
| Effective Green, g (s)            |      |      |       |      | 30.0 |      |                      | 32.0 |      |      | 32.0 |      |
| Actuated g/C Ratio                |      |      |       |      | 0.43 |      |                      | 0.46 |      |      | 0.46 |      |
| Clearance Time (s)                |      |      |       |      | 3.0  |      |                      | 3.0  |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |      |      |       |      | 1421 |      |                      | 591  |      |      | 744  |      |
| v/s Ratio Prot                    |      |      |       |      |      |      |                      |      |      |      | 0.06 |      |
| v/s Ratio Perm                    |      |      |       |      | 0.27 |      |                      | 0.25 |      |      |      |      |
| v/c Ratio                         |      |      |       |      | 0.62 |      |                      | 0.55 |      |      | 0.13 |      |
| Uniform Delay, d1                 |      |      |       |      | 15.6 |      |                      | 13.7 |      |      | 11.0 |      |
| Progression Factor                |      |      |       |      | 0.48 |      |                      | 0.89 |      |      | 0.36 |      |
| Incremental Delay, d2             |      |      |       |      | 2.0  |      |                      | 2.1  |      |      | 0.3  |      |
| Delay (s)                         |      |      |       |      | 9.4  |      |                      | 14.3 |      |      | 4.3  |      |
| Level of Service                  |      |      |       |      | A    |      |                      | B    |      |      | A    |      |
| Approach Delay (s)                |      | 0.0  |       |      | 9.4  |      |                      | 14.3 |      |      | 4.3  |      |
| Approach LOS                      |      | A    |       |      | A    |      |                      | B    |      |      | A    |      |
| <b>Intersection Summary</b>       |      |      |       |      |      |      |                      |      |      |      |      |      |
| HCM Average Control Delay         |      |      | 10.2  |      |      |      | HCM Level of Service |      |      |      | B    |      |
| HCM Volume to Capacity ratio      |      |      | 0.58  |      |      |      |                      |      |      |      |      |      |
| Actuated Cycle Length (s)         |      |      | 70.0  |      |      |      | Sum of lost time (s) |      |      | 8.0  |      |      |
| Intersection Capacity Utilization |      |      | 55.8% |      |      |      | ICU Level of Service |      |      | B    |      |      |
| Analysis Period (min)             |      |      | 15    |      |      |      |                      |      |      |      |      |      |
| c Critical Lane Group             |      |      |       |      |      |      |                      |      |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
6484: Capitol & 28th Street

4/6/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|-------|------|------|------|------|
| Lane Configurations    |      | ↕    |      | ↖    | ↗     |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      | 4.0  | 4.0   |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00 |      | 1.00 | 1.00  |      |      | 1.00  |      |      | 1.00 |      |
| Frt                    |      | 1.00 |      | 1.00 | 0.95  |      |      | 0.99  |      |      | 0.98 |      |
| Flt Protected          |      | 1.00 |      | 0.95 | 1.00  |      |      | 0.97  |      |      | 0.98 |      |
| Satd. Flow (prot)      |      | 1668 |      | 1770 | 1592  |      |      | 1615  |      |      | 1613 |      |
| Flt Permitted          |      | 0.92 |      | 0.37 | 1.00  |      |      | 0.76  |      |      | 0.81 |      |
| Satd. Flow (perm)      |      | 1545 |      | 693  | 1592  |      |      | 1263  |      |      | 1337 |      |
| Volume (vph)           | 24   | 406  | 8    | 11   | 333   | 168  | 312  | 175   | 30   | 34   | 48   | 15   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 24   | 406  | 8    | 11   | 333   | 168  | 312  | 175   | 30   | 34   | 48   | 15   |
| RTOR Reduction (vph)   | 0    | 1    | 0    | 0    | 26    | 0    | 0    | 3     | 0    | 0    | 7    | 0    |
| Lane Group Flow (vph)  | 0    | 437  | 0    | 11   | 475   | 0    | 0    | 514   | 0    | 0    | 90   | 0    |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      |      | Perm |       |      | Perm |       |      | Perm |      |      |
| Protected Phases       |      | 4    |      |      | 8     |      |      | 2     |      |      | 6    |      |
| Permitted Phases       | 4    |      |      | 8    |       |      | 2    |       |      | 6    |      |      |
| Actuated Green, G (s)  |      | 27.0 |      | 27.0 | 27.0  |      |      | 37.0  |      |      | 37.0 |      |
| Effective Green, g (s) |      | 26.0 |      | 26.0 | 26.0  |      |      | 36.0  |      |      | 36.0 |      |
| Actuated g/C Ratio     |      | 0.37 |      | 0.37 | 0.37  |      |      | 0.51  |      |      | 0.51 |      |
| Clearance Time (s)     |      | 3.0  |      | 3.0  | 3.0   |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 574  |      | 257  | 591   |      |      | 650   |      |      | 688  |      |
| v/s Ratio Prot         |      |      |      |      | c0.30 |      |      |       |      |      |      |      |
| v/s Ratio Perm         |      | 0.28 |      | 0.02 |       |      |      | c0.41 |      |      | 0.07 |      |
| v/c Ratio              |      | 0.76 |      | 0.04 | 0.80  |      |      | 0.79  |      |      | 0.13 |      |
| Uniform Delay, d1      |      | 19.3 |      | 14.1 | 19.7  |      |      | 13.9  |      |      | 8.9  |      |
| Progression Factor     |      | 1.00 |      | 1.08 | 0.89  |      |      | 0.38  |      |      | 0.39 |      |
| Incremental Delay, d2  |      | 9.2  |      | 0.3  | 10.8  |      |      | 8.7   |      |      | 0.4  |      |
| Delay (s)              |      | 28.5 |      | 15.5 | 28.3  |      |      | 14.1  |      |      | 3.8  |      |
| Level of Service       |      | C    |      | B    | C     |      |      | B     |      |      | A    |      |
| Approach Delay (s)     |      | 28.5 |      |      | 28.0  |      |      | 14.1  |      |      | 3.8  |      |
| Approach LOS           |      | C    |      |      | C     |      |      | B     |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 22.0  | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 0.80  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 83.2% | ICU Level of Service | E   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6485: N Street & 28th Street

4/6/2005



| Movement               | EBL  | EBT  | EBR  | WBL   | WBT  | WBR  | NBL   | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|-------|------|------|-------|------|------|------|------|------|
| Lane Configurations    |      | ↕↕   |      |       | ↕↕   |      |       | ↕    |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      |       | 4.0  |      |       | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor      |      | 0.95 |      |       | 1.00 |      |       | 1.00 |      |      | 1.00 |      |
| Frt                    |      | 1.00 |      |       | 0.88 |      |       | 0.95 |      |      | 1.00 |      |
| Flt Protected          |      | 0.99 |      |       | 0.99 |      |       | 1.00 |      |      | 0.98 |      |
| Satd. Flow (prot)      |      | 3336 |      |       | 1466 |      |       | 1596 |      |      | 1651 |      |
| Flt Permitted          |      | 0.89 |      |       | 0.93 |      |       | 1.00 |      |      | 0.92 |      |
| Satd. Flow (perm)      |      | 2972 |      |       | 1371 |      |       | 1596 |      |      | 1537 |      |
| Volume (vph)           | 41   | 352  | 7    | 48    | 0    | 409  | 0     | 98   | 54   | 21   | 47   | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 41   | 352  | 7    | 48    | 0    | 409  | 0     | 98   | 54   | 21   | 47   | 0    |
| RTOR Reduction (vph)   | 0    | 2    | 0    | 0     | 193  | 0    | 0     | 28   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 398  | 0    | 0     | 264  | 0    | 0     | 124  | 0    | 0    | 68   | 0    |
| Parking (#/hr)         | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      |      | Perm  |      |      |       |      |      | Perm |      |      |
| Protected Phases       | 2    |      |      | 6     |      |      | 8     |      |      | 4    |      |      |
| Permitted Phases       | 2    |      |      | 6     |      |      |       |      |      | 4    |      |      |
| Actuated Green, G (s)  | 38.0 |      |      | 38.0  |      |      | 26.0  |      |      | 26.0 |      |      |
| Effective Green, g (s) | 37.0 |      |      | 37.0  |      |      | 25.0  |      |      | 25.0 |      |      |
| Actuated g/C Ratio     | 0.53 |      |      | 0.53  |      |      | 0.36  |      |      | 0.36 |      |      |
| Clearance Time (s)     | 3.0  |      |      | 3.0   |      |      | 3.0   |      |      | 3.0  |      |      |
| Lane Grp Cap (vph)     | 1571 |      |      | 725   |      |      | 570   |      |      | 549  |      |      |
| v/s Ratio Prot         |      |      |      |       |      |      | c0.08 |      |      |      |      |      |
| v/s Ratio Perm         | 0.13 |      |      | c0.19 |      |      |       |      |      | 0.04 |      |      |
| v/c Ratio              | 0.25 |      |      | 0.36  |      |      | 0.22  |      |      | 0.12 |      |      |
| Uniform Delay, d1      | 9.0  |      |      | 9.6   |      |      | 15.7  |      |      | 15.1 |      |      |
| Progression Factor     | 1.00 |      |      | 4.35  |      |      | 1.00  |      |      | 0.89 |      |      |
| Incremental Delay, d2  | 0.4  |      |      | 1.1   |      |      | 0.9   |      |      | 0.5  |      |      |
| Delay (s)              | 9.4  |      |      | 43.0  |      |      | 16.6  |      |      | 13.9 |      |      |
| Level of Service       | A    |      |      | D     |      |      | B     |      |      | B    |      |      |
| Approach Delay (s)     | 9.4  |      |      | 43.0  |      |      | 16.6  |      |      | 13.9 |      |      |
| Approach LOS           | A    |      |      | D     |      |      | B     |      |      | B    |      |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 24.9  | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 0.31  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 64.5% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
6511: K Street & Alhambra

4/6/2005



| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations       |      | ↖    | ↗    |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |      | 4.0  | 4.0  |      | 4.0  |      |      | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor         |      | 1.00 | 1.00 |      | 1.00 |      |      | 0.95 |      |      | 0.95 |      |
| Fr <sub>t</sub>           |      | 1.00 | 0.85 |      | 0.99 |      |      | 0.99 |      |      | 0.94 |      |
| Fl <sub>t</sub> Protected |      | 0.97 | 1.00 |      | 0.99 |      |      | 0.99 |      |      | 1.00 |      |
| Satd. Flow (prot)         |      | 1812 | 1583 |      | 1822 |      |      | 3454 |      |      | 3332 |      |
| Fl <sub>t</sub> Permitted |      | 0.85 | 1.00 |      | 0.93 |      |      | 0.57 |      |      | 0.95 |      |
| Satd. Flow (perm)         |      | 1576 | 1583 |      | 1723 |      |      | 1986 |      |      | 3180 |      |
| Volume (vph)              | 44   | 35   | 109  | 25   | 61   | 6    | 131  | 320  | 36   | 3    | 689  | 441  |
| Peak-hour factor, PHF     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 44   | 35   | 109  | 25   | 61   | 6    | 131  | 320  | 36   | 3    | 689  | 441  |
| RTOR Reduction (vph)      | 0    | 0    | 72   | 0    | 3    | 0    | 0    | 8    | 0    | 0    | 146  | 0    |
| Lane Group Flow (vph)     | 0    | 79   | 37   | 0    | 89   | 0    | 0    | 479  | 0    | 0    | 987  | 0    |
| Turn Type                 | Perm |      | Perm | Perm |      |      | Perm |      |      | Perm |      |      |
| Protected Phases          |      | 4    |      |      | 8    |      |      | 2    |      |      | 6    |      |
| Permitted Phases          | 4    |      | 4    | 8    |      |      | 2    |      |      | 6    |      |      |
| Actuated Green, G (s)     |      | 25.0 | 25.0 |      | 25.0 |      |      | 39.0 |      |      | 39.0 |      |
| Effective Green, g (s)    |      | 24.0 | 24.0 |      | 24.0 |      |      | 38.0 |      |      | 38.0 |      |
| Actuated g/C Ratio        |      | 0.34 | 0.34 |      | 0.34 |      |      | 0.54 |      |      | 0.54 |      |
| Clearance Time (s)        |      | 3.0  | 3.0  |      | 3.0  |      |      | 3.0  |      |      | 3.0  |      |
| Lane Grp Cap (vph)        |      | 540  | 543  |      | 591  |      |      | 1078 |      |      | 1726 |      |
| v/s Ratio Prot            |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm            |      | 0.05 | 0.02 |      | 0.05 |      |      | 0.24 |      |      | 0.31 |      |
| v/c Ratio                 |      | 0.15 | 0.07 |      | 0.15 |      |      | 0.44 |      |      | 0.57 |      |
| Uniform Delay, d1         |      | 15.9 | 15.5 |      | 15.9 |      |      | 9.6  |      |      | 10.6 |      |
| Progression Factor        |      | 0.79 | 1.07 |      | 1.00 |      |      | 0.36 |      |      | 0.37 |      |
| Incremental Delay, d2     |      | 0.6  | 0.2  |      | 0.5  |      |      | 0.9  |      |      | 0.9  |      |
| Delay (s)                 |      | 13.1 | 16.8 |      | 16.5 |      |      | 4.3  |      |      | 4.8  |      |
| Level of Service          |      | B    | B    |      | B    |      |      | A    |      |      | A    |      |
| Approach Delay (s)        |      | 15.3 |      |      | 16.5 |      |      | 4.3  |      |      | 4.8  |      |
| Approach LOS              |      | B    |      |      | B    |      |      | A    |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 6.3   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.41  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 68.7% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 9622: K Street & 30th Street

4/6/2005



| Movement                          | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations               | ↖    | ↑    |      |      | ↑    | ↗    |      | ↕    |      |      |      |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               | 4.0  | 4.0  |      |      | 4.0  | 4.0  |      | 4.0  |      |      |      |      |
| Lane Util. Factor                 | 1.00 | 1.00 |      |      | 1.00 | 1.00 |      | 0.91 |      |      |      |      |
| Fr <sub>t</sub>                   | 1.00 | 1.00 |      |      | 1.00 | 0.85 |      | 0.99 |      |      |      |      |
| Fl <sub>t</sub> Protected         | 0.95 | 1.00 |      |      | 1.00 | 1.00 |      | 0.99 |      |      |      |      |
| Satd. Flow (prot)                 | 1770 | 1863 |      |      | 1863 | 1583 |      | 4942 |      |      |      |      |
| Fl <sub>t</sub> Permitted         | 0.35 | 1.00 |      |      | 1.00 | 1.00 |      | 0.99 |      |      |      |      |
| Satd. Flow (perm)                 | 660  | 1863 |      |      | 1863 | 1583 |      | 4942 |      |      |      |      |
| Volume (vph)                      | 28   | 141  | 0    | 0    | 527  | 59   | 263  | 571  | 88   | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 28   | 141  | 0    | 0    | 527  | 59   | 263  | 571  | 88   | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0    | 0    | 0    | 0    | 0    | 27   | 0    | 18   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 28   | 141  | 0    | 0    | 527  | 32   | 0    | 904  | 0    | 0    | 0    | 0    |
| Turn Type                         | Perm |      |      | Perm |      |      | Perm |      |      |      |      |      |
| Protected Phases                  |      | 4    |      |      | 8    |      |      | 2    |      |      |      |      |
| Permitted Phases                  | 4    |      |      |      |      | 8    |      | 2    |      |      |      |      |
| Actuated Green, G (s)             | 39.0 | 39.0 |      |      | 39.0 | 39.0 |      | 25.0 |      |      |      |      |
| Effective Green, g (s)            | 38.0 | 38.0 |      |      | 38.0 | 38.0 |      | 24.0 |      |      |      |      |
| Actuated g/C Ratio                | 0.54 | 0.54 |      |      | 0.54 | 0.54 |      | 0.34 |      |      |      |      |
| Clearance Time (s)                | 3.0  | 3.0  |      |      | 3.0  | 3.0  |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)                | 358  | 1011 |      |      | 1011 | 859  |      | 1694 |      |      |      |      |
| v/s Ratio Prot                    |      | 0.08 |      |      | 0.28 |      |      |      |      |      |      |      |
| v/s Ratio Perm                    | 0.04 |      |      |      |      | 0.02 |      | 0.18 |      |      |      |      |
| v/c Ratio                         | 0.08 | 0.14 |      |      | 0.52 | 0.04 |      | 0.53 |      |      |      |      |
| Uniform Delay, d <sub>1</sub>     | 7.6  | 7.9  |      |      | 10.2 | 7.5  |      | 18.5 |      |      |      |      |
| Progression Factor                | 0.77 | 0.80 |      |      | 1.16 | 1.46 |      | 1.20 |      |      |      |      |
| Incremental Delay, d <sub>2</sub> | 0.4  | 0.3  |      |      | 1.7  | 0.1  |      | 1.1  |      |      |      |      |
| Delay (s)                         | 6.3  | 6.6  |      |      | 13.5 | 11.0 |      | 23.2 |      |      |      |      |
| Level of Service                  | A    | A    |      |      | B    | B    |      | C    |      |      |      |      |
| Approach Delay (s)                |      | 6.5  |      |      | 13.3 |      |      | 23.2 |      |      | 0.0  |      |
| Approach LOS                      |      | A    |      |      | B    |      |      | C    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 18.1  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.53  |                      |     |
| Actuated Cycle Length (s)         | 70.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 61.5% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

CUMULATIVE PLUS TRINITY PROJECT  
WITH SMART PLAN

PM Peak Hour

Signalized Intersections

(pm8)



HCM Signalized Intersection Capacity Analysis  
 2004: L Street & 21th Street

4/4/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      |      | ↑↑   |      |      | ↑↑↑  |      |      |      |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      |      | 4.0  |      |      |      |      |
| Lane Util. Factor      |      |      |      |      | 0.95 |      |      | 0.91 |      |      |      |      |
| Fr't                   |      |      |      |      | 0.97 |      |      | 1.00 |      |      |      |      |
| Flt Protected          |      |      |      |      | 1.00 |      |      | 1.00 |      |      |      |      |
| Satd. Flow (prot)      |      |      |      |      | 3269 |      |      | 4892 |      |      |      |      |
| Flt Permitted          |      |      |      |      | 1.00 |      |      | 1.00 |      |      |      |      |
| Satd. Flow (perm)      |      |      |      |      | 3269 |      |      | 4892 |      |      |      |      |
| Volume (vph)           | 0    | 0    | 0    | 0    | 715  | 162  | 173  | 1590 | 0    | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 0    | 715  | 162  | 173  | 1590 | 0    | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 7    | 0    | 0    | 22   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 870  | 0    | 0    | 1741 | 0    | 0    | 0    | 0    |
| Parking (#/hr)         | 0    | 0    |      |      | 0    | 0    | 0    | 0    | 0    |      |      |      |
| Turn Type              |      |      |      |      |      |      | Perm |      |      |      |      |      |
| Protected Phases       |      |      |      |      | 6    |      |      | 8    |      |      |      |      |
| Permitted Phases       |      |      |      |      |      |      | 8    |      |      |      |      |      |
| Actuated Green, G (s)  |      |      |      |      | 24.0 |      |      | 30.0 |      |      |      |      |
| Effective Green, g (s) |      |      |      |      | 23.0 |      |      | 29.0 |      |      |      |      |
| Actuated g/C Ratio     |      |      |      |      | 0.38 |      |      | 0.48 |      |      |      |      |
| Clearance Time (s)     |      |      |      |      | 3.0  |      |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)     |      |      |      |      | 1253 |      |      | 2364 |      |      |      |      |
| v/s Ratio Prot         |      |      |      |      | 0.27 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      |      |      |      |      |      | 0.36 |      |      |      |      |
| v/c Ratio              |      |      |      |      | 0.69 |      |      | 0.74 |      |      |      |      |
| Uniform Delay, d1      |      |      |      |      | 15.5 |      |      | 12.4 |      |      |      |      |
| Progression Factor     |      |      |      |      | 0.48 |      |      | 1.00 |      |      |      |      |
| Incremental Delay, d2  |      |      |      |      | 2.9  |      |      | 2.1  |      |      |      |      |
| Delay (s)              |      |      |      |      | 10.4 |      |      | 14.5 |      |      |      |      |
| Level of Service       |      |      |      |      | B    |      |      | B    |      |      |      |      |
| Approach Delay (s)     |      | 0.0  |      |      | 10.4 |      |      | 14.5 |      |      | 0.0  |      |
| Approach LOS           |      | A    |      |      | B    |      |      | B    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 13.1  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.72  |                      |     |
| Actuated Cycle Length (s)         | 60.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 65.8% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 2012: J Street & 21th Street

4/4/2005



| Movement                          | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT                  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|-------|------|------|------|------|------|----------------------|------|------|------|------|
| Lane Configurations               |      | ↑↑↑   |      |      |      |      |      | ↑↑↑                  |      |      |      |      |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0   |      |      |      |      |      | 4.0                  |      |      |      |      |
| Lane Util. Factor                 |      | 0.91  |      |      |      |      |      | 0.91                 |      |      |      |      |
| Frt                               |      | 1.00  |      |      |      |      |      | 0.97                 |      |      |      |      |
| Flt Protected                     |      | 1.00  |      |      |      |      |      | 1.00                 |      |      |      |      |
| Satd. Flow (prot)                 |      | 4907  |      |      |      |      |      | 4769                 |      |      |      |      |
| Flt Permitted                     |      | 1.00  |      |      |      |      |      | 1.00                 |      |      |      |      |
| Satd. Flow (perm)                 |      | 4907  |      |      |      |      |      | 4769                 |      |      |      |      |
| Volume (vph)                      | 76   | 1933  | 0    | 0    | 0    | 0    | 0    | 1455                 | 361  | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 76   | 1933  | 0    | 0    | 0    | 0    | 0    | 1455                 | 361  | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0    | 5     | 0    | 0    | 0    | 0    | 0    | 2                    | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 0    | 2004  | 0    | 0    | 0    | 0    | 0    | 1814                 | 0    | 0    | 0    | 0    |
| Parking (#/hr)                    | 0    | 0     |      |      |      |      |      | 0                    | 0    |      |      |      |
| Turn Type                         | Perm |       |      |      |      |      |      |                      |      |      |      |      |
| Protected Phases                  |      | 2     |      |      |      |      |      | 8                    |      |      |      |      |
| Permitted Phases                  | 2    |       |      |      |      |      |      |                      |      |      |      |      |
| Actuated Green, G (s)             |      | 28.0  |      |      |      |      |      | 26.0                 |      |      |      |      |
| Effective Green, g (s)            |      | 27.0  |      |      |      |      |      | 25.0                 |      |      |      |      |
| Actuated g/C Ratio                |      | 0.45  |      |      |      |      |      | 0.42                 |      |      |      |      |
| Clearance Time (s)                |      | 3.0   |      |      |      |      |      | 3.0                  |      |      |      |      |
| Lane Grp Cap (vph)                |      | 2208  |      |      |      |      |      | 1987                 |      |      |      |      |
| v/s Ratio Prot                    |      |       |      |      |      |      |      | c0.38                |      |      |      |      |
| v/s Ratio Perm                    |      | 0.41  |      |      |      |      |      |                      |      |      |      |      |
| v/c Ratio                         |      | 0.91  |      |      |      |      |      | 0.91                 |      |      |      |      |
| Uniform Delay, d1                 |      | 15.3  |      |      |      |      |      | 16.5                 |      |      |      |      |
| Progression Factor                |      | 0.60  |      |      |      |      |      | 0.43                 |      |      |      |      |
| Incremental Delay, d2             |      | 4.7   |      |      |      |      |      | 5.7                  |      |      |      |      |
| Delay (s)                         |      | 13.9  |      |      |      |      |      | 12.8                 |      |      |      |      |
| Level of Service                  |      | B     |      |      |      |      |      | B                    |      |      |      |      |
| Approach Delay (s)                |      | 13.9  |      |      | 0.0  |      |      | 12.8                 |      |      | 0.0  |      |
| Approach LOS                      |      | B     |      |      | A    |      |      | B                    |      |      | A    |      |
| <b>Intersection Summary</b>       |      |       |      |      |      |      |      |                      |      |      |      |      |
| HCM Average Control Delay         |      | 13.4  |      |      |      |      |      | HCM Level of Service |      | B    |      |      |
| HCM Volume to Capacity ratio      |      | 0.91  |      |      |      |      |      |                      |      |      |      |      |
| Actuated Cycle Length (s)         |      | 60.0  |      |      |      |      |      | Sum of lost time (s) |      | 8.0  |      |      |
| Intersection Capacity Utilization |      | 81.7% |      |      |      |      |      | ICU Level of Service |      | D    |      |      |
| Analysis Period (min)             |      | 15    |      |      |      |      |      |                      |      |      |      |      |
| c Critical Lane Group             |      |       |      |      |      |      |      |                      |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
 2074: J Street & 19th Street

4/4/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|-------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑↑↑   |      |      |      |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      |      |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 0.91  |      |      |      |      |      |      |      |      | 0.91 |      |
| Frt                    |      | 0.96  |      |      |      |      |      |      |      |      | 1.00 |      |
| Flt Protected          |      | 1.00  |      |      |      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (prot)      |      | 4739  |      |      |      |      |      |      |      |      | 4843 |      |
| Flt Permitted          |      | 1.00  |      |      |      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (perm)      |      | 4739  |      |      |      |      |      |      |      |      | 4843 |      |
| Volume (vph)           | 0    | 1742  | 550  | 0    | 0    | 0    | 0    | 0    | 0    | 198  | 459  | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 1742  | 550  | 0    | 0    | 0    | 0    | 0    | 0    | 198  | 459  | 0    |
| RTOR Reduction (vph)   | 0    | 45    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 15   | 0    |
| Lane Group Flow (vph)  | 0    | 2247  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 642  | 0    |
| Parking (#/hr)         |      | 0     | 0    |      |      |      |      |      |      | 0    | 0    |      |
| Turn Type              |      |       |      |      |      |      |      |      |      | Perm |      |      |
| Protected Phases       |      | 2     |      |      |      |      |      |      |      |      |      | 4    |
| Permitted Phases       |      |       |      |      |      |      |      |      |      | 4    |      |      |
| Actuated Green, G (s)  |      | 37.0  |      |      |      |      |      |      |      |      |      | 17.0 |
| Effective Green, g (s) |      | 36.0  |      |      |      |      |      |      |      |      |      | 16.0 |
| Actuated g/C Ratio     |      | 0.60  |      |      |      |      |      |      |      |      |      | 0.27 |
| Clearance Time (s)     |      | 3.0   |      |      |      |      |      |      |      |      |      | 3.0  |
| Lane Grp Cap (vph)     |      | 2843  |      |      |      |      |      |      |      |      |      | 1291 |
| v/s Ratio Prot         |      | c0.47 |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |       |      |      |      |      |      |      |      |      |      | 0.13 |
| v/c Ratio              |      | 0.79  |      |      |      |      |      |      |      |      |      | 0.50 |
| Uniform Delay, d1      |      | 9.1   |      |      |      |      |      |      |      |      |      | 18.6 |
| Progression Factor     |      | 1.00  |      |      |      |      |      |      |      |      |      | 1.00 |
| Incremental Delay, d2  |      | 2.3   |      |      |      |      |      |      |      |      |      | 1.4  |
| Delay (s)              |      | 11.5  |      |      |      |      |      |      |      |      |      | 20.0 |
| Level of Service       |      | B     |      |      |      |      |      |      |      |      |      | B    |
| Approach Delay (s)     |      | 11.5  |      |      | 0.0  |      |      | 0.0  |      |      |      | 20.0 |
| Approach LOS           |      | B     |      |      | A    |      |      | A    |      |      |      | B    |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 13.4  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.70  |                      |     |
| Actuated Cycle Length (s)         | 60.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 65.5% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 2088: L Street & 29th Street

4/4/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      | ↙    | ↕    |      |      |      |      |      | ↕    | ↗    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      |      | 4.0  | 4.0  |      |      |      |      |      | 4.0  | 4.0  |
| Lane Util. Factor      |      |      |      | 1.00 | 0.95 |      |      |      |      |      | 0.86 | 0.86 |
| Frt                    |      |      |      | 1.00 | 1.00 |      |      |      |      |      | 1.00 | 0.85 |
| Flt Protected          |      |      |      | 0.95 | 1.00 |      |      |      |      |      | 1.00 | 1.00 |
| Satd. Flow (prot)      |      |      |      | 1770 | 3539 |      |      |      |      |      | 4646 | 1226 |
| Flt Permitted          |      |      |      | 0.95 | 1.00 |      |      |      |      |      | 1.00 | 1.00 |
| Satd. Flow (perm)      |      |      |      | 1770 | 3539 |      |      |      |      |      | 4646 | 1226 |
| Volume (vph)           | 0    | 0    | 0    | 253  | 459  | 0    | 0    | 0    | 0    | 0    | 1445 | 189  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 253  | 459  | 0    | 0    | 0    | 0    | 0    | 1445 | 189  |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 17   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 88   |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 236  | 459  | 0    | 0    | 0    | 0    | 0    | 1445 | 101  |
| Parking (#/hr)         |      |      | 0    |      |      |      |      |      |      |      | 0    | 0    |
| Turn Type              |      |      |      | Perm |      |      |      |      |      |      |      | Perm |
| Protected Phases       |      |      |      |      | 6    |      |      |      |      |      |      | 4    |
| Permitted Phases       |      |      |      | 6    |      |      |      |      |      |      |      | 4    |
| Actuated Green, G (s)  |      |      |      | 35.0 | 35.0 |      |      |      |      |      | 49.0 | 49.0 |
| Effective Green, g (s) |      |      |      | 34.0 | 34.0 |      |      |      |      |      | 48.0 | 48.0 |
| Actuated g/C Ratio     |      |      |      | 0.38 | 0.38 |      |      |      |      |      | 0.53 | 0.53 |
| Clearance Time (s)     |      |      |      | 3.0  | 3.0  |      |      |      |      |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |      |      |      | 669  | 1337 |      |      |      |      |      | 2478 | 654  |
| v/s Ratio Prot         |      |      |      |      | 0.13 |      |      |      |      |      | 0.31 |      |
| v/s Ratio Perm         |      |      |      | 0.13 |      |      |      |      |      |      |      | 0.08 |
| v/c Ratio              |      |      |      | 0.35 | 0.34 |      |      |      |      |      | 0.58 | 0.15 |
| Uniform Delay, d1      |      |      |      | 20.1 | 20.0 |      |      |      |      |      | 14.2 | 10.7 |
| Progression Factor     |      |      |      | 0.47 | 0.53 |      |      |      |      |      | 0.64 | 0.00 |
| Incremental Delay, d2  |      |      |      | 1.4  | 0.7  |      |      |      |      |      | 0.8  | 0.4  |
| Delay (s)              |      |      |      | 10.9 | 11.2 |      |      |      |      |      | 9.9  | 0.4  |
| Level of Service       |      |      |      | B    | B    |      |      |      |      |      | A    | A    |
| Approach Delay (s)     |      | 0.0  |      |      | 11.1 |      | 0.0  |      |      |      | 8.8  |      |
| Approach LOS           |      | A    |      |      | B    |      | A    |      |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 9.5   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.49  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 50.0% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
 2239: L Street & Alhambra

4/4/2005



| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations       |      |      |      |      | ↕    |      |      | ↕    |      |      | ↕    | ↕    |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |      |      |      |      | 4.0  |      |      | 4.0  |      |      | 4.0  | 4.0  |
| Lane Util. Factor         |      |      |      |      | 1.00 |      |      | 1.00 |      |      | 1.00 | 1.00 |
| Fr <sub>t</sub>           |      |      |      |      | 0.98 |      |      | 0.98 |      |      | 1.00 | 0.85 |
| Fl <sub>t</sub> Protected |      |      |      |      | 0.99 |      |      | 0.99 |      |      | 1.00 | 1.00 |
| Satd. Flow (prot)         |      |      |      |      | 1627 |      |      | 1624 |      |      | 1858 | 1425 |
| Fl <sub>t</sub> Permitted |      |      |      |      | 0.99 |      |      | 0.69 |      |      | 0.93 | 1.00 |
| Satd. Flow (perm)         |      |      |      |      | 1627 |      |      | 1131 |      |      | 1740 | 1425 |
| Volume (vph)              | 0    | 0    | 0    | 46   | 229  | 56   | 127  | 528  | 137  | 42   | 719  | 293  |
| Peak-hour factor, PHF     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 0    | 0    | 0    | 46   | 229  | 56   | 127  | 528  | 137  | 42   | 719  | 293  |
| RTOR Reduction (vph)      | 0    | 0    | 0    | 0    | 8    | 0    | 0    | 8    | 0    | 0    | 0    | 71   |
| Lane Group Flow (vph)     | 0    | 0    | 0    | 0    | 323  | 0    | 0    | 784  | 0    | 0    | 761  | 222  |
| Parking (#/hr)            |      |      |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Turn Type                 |      |      |      | Perm |      |      | Perm |      |      | Perm |      | Perm |
| Protected Phases          |      |      |      |      | 6    |      |      | 8    |      |      | 4    |      |
| Permitted Phases          |      |      |      | 6    |      |      | 8    |      |      | 4    |      | 4    |
| Actuated Green, G (s)     |      |      |      |      | 19.0 |      |      | 65.0 |      |      | 65.0 | 65.0 |
| Effective Green, g (s)    |      |      |      |      | 18.0 |      |      | 64.0 |      |      | 64.0 | 64.0 |
| Actuated g/C Ratio        |      |      |      |      | 0.20 |      |      | 0.71 |      |      | 0.71 | 0.71 |
| Clearance Time (s)        |      |      |      |      | 3.0  |      |      | 3.0  |      |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)        |      |      |      |      | 325  |      |      | 804  |      |      | 1237 | 1013 |
| v/s Ratio Prot            |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm            |      |      |      |      | 0.20 |      |      | 0.69 |      |      | 0.44 | 0.16 |
| v/c Ratio                 |      |      |      |      | 0.99 |      |      | 0.97 |      |      | 0.62 | 0.22 |
| Uniform Delay, d1         |      |      |      |      | 35.9 |      |      | 12.2 |      |      | 6.7  | 4.4  |
| Progression Factor        |      |      |      |      | 1.00 |      |      | 0.67 |      |      | 0.88 | 1.69 |
| Incremental Delay, d2     |      |      |      |      | 48.4 |      |      | 18.3 |      |      | 2.0  | 0.4  |
| Delay (s)                 |      |      |      |      | 84.3 |      |      | 26.5 |      |      | 7.9  | 7.9  |
| Level of Service          |      |      |      |      | F    |      |      | C    |      |      | A    | A    |
| Approach Delay (s)        |      | 0.0  |      |      | 84.3 |      |      | 26.5 |      |      | 7.9  |      |
| Approach LOS              |      | A    |      |      | F    |      |      | C    |      |      | A    |      |

| Intersection Summary              |        |                      |     |
|-----------------------------------|--------|----------------------|-----|
| HCM Average Control Delay         | 26.3   | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 0.98   |                      |     |
| Actuated Cycle Length (s)         | 90.0   | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 111.3% | ICU Level of Service | H   |
| Analysis Period (min)             | 15     |                      |     |
| c Critical Lane Group             |        |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3426: L Street & 19th Street

4/4/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR                  |     |
|-----------------------------------|------|------|-------|------|------|------|------|------|------|------|------|----------------------|-----|
| Lane Configurations               |      |      |       |      | ↑↑   |      |      |      |      |      | ↑↑↑  |                      |     |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900                 |     |
| Total Lost time (s)               |      |      |       |      | 4.0  |      |      |      |      |      | 4.0  |                      |     |
| Lane Util. Factor                 |      |      |       |      | 0.95 |      |      |      |      |      | 0.91 |                      |     |
| Frt                               |      |      |       |      | 1.00 |      |      |      |      |      | 1.00 |                      |     |
| Flt Protected                     |      |      |       |      | 0.99 |      |      |      |      |      | 1.00 |                      |     |
| Satd. Flow (prot)                 |      |      |       |      | 3330 |      |      |      |      |      | 4912 |                      |     |
| Flt Permitted                     |      |      |       |      | 0.99 |      |      |      |      |      | 1.00 |                      |     |
| Satd. Flow (perm)                 |      |      |       |      | 3330 |      |      |      |      |      | 4912 |                      |     |
| Volume (vph)                      | 0    | 0    | 0     | 180  | 744  | 0    | 0    | 0    | 0    | 0    | 1254 | 7                    |     |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00                 |     |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 180  | 744  | 0    | 0    | 0    | 0    | 0    | 1254 | 7                    |     |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 0    | 8    | 0    | 0    | 0    | 0    | 0    | 1    | 0                    |     |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 0    | 916  | 0    | 0    | 0    | 0    | 0    | 1260 | 0                    |     |
| Parking (#/hr)                    |      | 0    | 0     | 0    | 0    |      |      |      |      | 0    | 0    | 0                    |     |
| Turn Type                         |      |      |       |      | Perm |      |      |      |      |      |      |                      |     |
| Protected Phases                  |      |      |       |      | 6    |      |      |      |      |      | 4    |                      |     |
| Permitted Phases                  |      |      |       | 6    |      |      |      |      |      |      |      |                      |     |
| Actuated Green, G (s)             |      |      |       |      | 29.0 |      |      |      |      |      | 25.0 |                      |     |
| Effective Green, g (s)            |      |      |       |      | 28.0 |      |      |      |      |      | 24.0 |                      |     |
| Actuated g/C Ratio                |      |      |       |      | 0.47 |      |      |      |      |      | 0.40 |                      |     |
| Clearance Time (s)                |      |      |       |      | 3.0  |      |      |      |      |      | 3.0  |                      |     |
| Lane Grp Cap (vph)                |      |      |       |      | 1554 |      |      |      |      |      | 1965 |                      |     |
| v/s Ratio Prot                    |      |      |       |      |      |      |      |      |      |      | 0.26 |                      |     |
| v/s Ratio Perm                    |      |      |       |      | 0.28 |      |      |      |      |      |      |                      |     |
| v/c Ratio                         |      |      |       |      | 0.59 |      |      |      |      |      | 0.64 |                      |     |
| Uniform Delay, d1                 |      |      |       |      | 11.8 |      |      |      |      |      | 14.5 |                      |     |
| Progression Factor                |      |      |       |      | 0.36 |      |      |      |      |      | 0.77 |                      |     |
| Incremental Delay, d2             |      |      |       |      | 1.2  |      |      |      |      |      | 1.4  |                      |     |
| Delay (s)                         |      |      |       |      | 5.5  |      |      |      |      |      | 12.6 |                      |     |
| Level of Service                  |      |      |       |      | A    |      |      |      |      |      | B    |                      |     |
| Approach Delay (s)                |      | 0.0  |       |      | 5.5  |      |      | 0.0  |      |      | 12.6 |                      |     |
| Approach LOS                      |      | A    |       |      | A    |      |      | A    |      |      | B    |                      |     |
| <b>Intersection Summary</b>       |      |      |       |      |      |      |      |      |      |      |      |                      |     |
| HCM Average Control Delay         |      |      | 9.6   |      |      |      |      |      |      |      |      | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      |      |      | 0.61  |      |      |      |      |      |      |      |      |                      |     |
| Actuated Cycle Length (s)         |      |      | 60.0  |      |      |      |      |      |      |      |      | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization |      |      | 56.8% |      |      |      |      |      |      |      |      | ICU Level of Service | B   |
| Analysis Period (min)             |      |      | 15    |      |      |      |      |      |      |      |      |                      |     |
| c Critical Lane Group             |      |      |       |      |      |      |      |      |      |      |      |                      |     |

# HCM Signalized Intersection Capacity Analysis

3427: L Street & 26th St

4/4/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      |      | ↕↕   |      |      | ↕    |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      |      | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor      |      |      |      |      | 0.95 |      |      | 1.00 |      |      | 1.00 |      |
| Frt                    |      |      |      |      | 1.00 |      |      | 1.00 |      |      | 0.95 |      |
| Flt Protected          |      |      |      |      | 1.00 |      |      | 0.98 |      |      | 1.00 |      |
| Satd. Flow (prot)      |      |      |      |      | 3348 |      |      | 1643 |      |      | 1596 |      |
| Flt Permitted          |      |      |      |      | 1.00 |      |      | 0.89 |      |      | 1.00 |      |
| Satd. Flow (perm)      |      |      |      |      | 3348 |      |      | 1498 |      |      | 1596 |      |
| Volume (vph)           | 0    | 0    | 0    | 14   | 746  | 18   | 35   | 52   | 0    | 0    | 63   | 35   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 14   | 746  | 18   | 35   | 52   | 0    | 0    | 63   | 35   |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 3    | 0    | 0    | 0    | 0    | 0    | 22   | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 775  | 0    | 0    | 87   | 0    | 0    | 76   | 0    |
| Parking (#/hr)         |      |      |      | 0    | 0    | 0    | 0    | 0    |      |      | 0    | 0    |
| Turn Type              |      |      |      |      | Perm |      |      | Perm |      |      |      |      |
| Protected Phases       |      |      |      |      |      | 8    |      | 2    |      |      | 6    |      |
| Permitted Phases       |      |      |      |      | 8    |      | 2    |      |      |      |      |      |
| Actuated Green, G (s)  |      |      |      |      | 30.0 |      |      | 24.0 |      |      | 24.0 |      |
| Effective Green, g (s) |      |      |      |      | 29.0 |      |      | 23.0 |      |      | 23.0 |      |
| Actuated g/C Ratio     |      |      |      |      | 0.48 |      |      | 0.38 |      |      | 0.38 |      |
| Clearance Time (s)     |      |      |      |      | 3.0  |      |      | 3.0  |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      |      |      |      | 1618 |      |      | 574  |      |      | 612  |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      | 0.05 |      |
| v/s Ratio Perm         |      |      |      |      | 0.23 |      |      | 0.06 |      |      |      |      |
| v/c Ratio              |      |      |      |      | 0.48 |      |      | 0.15 |      |      | 0.12 |      |
| Uniform Delay, d1      |      |      |      |      | 10.4 |      |      | 12.1 |      |      | 12.0 |      |
| Progression Factor     |      |      |      |      | 1.00 |      |      | 0.68 |      |      | 1.00 |      |
| Incremental Delay, d2  |      |      |      |      | 1.0  |      |      | 0.5  |      |      | 0.4  |      |
| Delay (s)              |      |      |      |      | 11.4 |      |      | 8.7  |      |      | 12.4 |      |
| Level of Service       |      |      |      |      | B    |      |      | A    |      |      | B    |      |
| Approach Delay (s)     |      | 0.0  |      |      | 11.4 |      |      | 8.7  |      |      | 12.4 |      |
| Approach LOS           |      | A    |      |      | B    |      |      | A    |      |      | B    |      |

## Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.3  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.33  |                      |     |
| Actuated Cycle Length (s)         | 60.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 39.6% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3428: J Street & 29th St off ramp

4/4/2005



| Movement                          | EBT   | EBR  | SBL   | SBT   | SWL2  | SWL   |
|-----------------------------------|-------|------|-------|-------|-------|-------|
| Lane Configurations               | ↑↑↑   |      |       | ←↑↑   |       | ↘↑    |
| Ideal Flow (vphpl)                | 1900  | 1900 | 1900  | 1900  | 1900  | 1900  |
| Total Lost time (s)               | 4.0   |      |       | 4.0   |       | 4.0   |
| Lane Util. Factor                 | 0.91  |      |       | 0.91  |       | 0.97  |
| Fr <sub>t</sub>                   | 0.95  |      |       | 1.00  |       | 1.00  |
| Fl <sub>t</sub> Protected         | 1.00  |      |       | 0.99  |       | 0.95  |
| Satd. Flow (prot)                 | 4684  |      |       | 4874  |       | 3433  |
| Fl <sub>t</sub> Permitted         | 1.00  |      |       | 0.99  |       | 0.95  |
| Satd. Flow (perm)                 | 4684  |      |       | 4874  |       | 3433  |
| Volume (vph)                      | 1388  | 638  | 83    | 402   | 105   | 385   |
| Peak-hour factor, PHF             | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)                   | 1388  | 638  | 83    | 402   | 105   | 385   |
| RTOR Reduction (vph)              | 32    | 0    | 0     | 0     | 0     | 28    |
| Lane Group Flow (vph)             | 1995  | 0    | 0     | 485   | 0     | 462   |
| Parking (#/hr)                    | 0     | 0    |       | 0     |       |       |
| Turn Type                         |       |      | Split |       | Split |       |
| Protected Phases                  | 2     |      | 8     | 8     | 4     | 4     |
| Permitted Phases                  |       |      |       |       |       |       |
| Actuated Green, G (s)             | 46.0  |      |       | 17.0  |       | 18.0  |
| Effective Green, g (s)            | 45.0  |      |       | 16.0  |       | 17.0  |
| Actuated g/C Ratio                | 0.50  |      |       | 0.18  |       | 0.19  |
| Clearance Time (s)                | 3.0   |      |       | 3.0   |       | 3.0   |
| Lane Grp Cap (vph)                | 2342  |      |       | 866   |       | 648   |
| v/s Ratio Prot                    | c0.43 |      |       | c0.10 |       | c0.13 |
| v/s Ratio Perm                    |       |      |       |       |       |       |
| v/c Ratio                         | 0.85  |      |       | 0.56  |       | 0.71  |
| Uniform Delay, d <sub>1</sub>     | 19.6  |      |       | 33.8  |       | 34.2  |
| Progression Factor                | 0.38  |      |       | 1.00  |       | 1.00  |
| Incremental Delay, d <sub>2</sub> | 2.6   |      |       | 2.6   |       | 6.5   |
| Delay (s)                         | 10.0  |      |       | 36.4  |       | 40.8  |
| Level of Service                  | B     |      |       | D     |       | D     |
| Approach Delay (s)                | 10.0  |      |       | 36.4  |       | 40.8  |
| Approach LOS                      | B     |      |       | D     |       | D     |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 19.3  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.76  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 74.5% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3429: J Street & Alhambra

4/4/2005



| Movement               | EBL   | EBT   | EBR  | WBL   | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|-------|-------|------|-------|------|------|------|------|------|------|-------|------|
| Lane Configurations    | ↖     | ↕     |      | ↖     | ↕    | ↗    |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0   | 4.0   |      | 4.0   | 4.0  | 4.0  |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor      | 1.00  | 0.95  |      | 0.95  | 0.95 | 1.00 |      | 0.95 |      |      | 0.95  |      |
| Frt                    | 1.00  | 0.97  |      | 1.00  | 1.00 | 0.85 |      | 0.94 |      |      | 1.00  |      |
| Flt Protected          | 0.95  | 1.00  |      | 0.95  | 0.95 | 1.00 |      | 1.00 |      |      | 0.99  |      |
| Satd. Flow (prot)      | 1770  | 3258  |      | 1681  | 1681 | 1425 |      | 3173 |      |      | 3343  |      |
| Flt Permitted          | 0.95  | 1.00  |      | 0.95  | 0.95 | 1.00 |      | 1.00 |      |      | 0.75  |      |
| Satd. Flow (perm)      | 1770  | 3258  |      | 1681  | 1681 | 1425 |      | 3173 |      |      | 2520  |      |
| Volume (vph)           | 160   | 931   | 243  | 641   | 0    | 274  | 0    | 285  | 171  | 51   | 382   | 0    |
| Peak-hour factor, PHF  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 160   | 931   | 243  | 641   | 0    | 274  | 0    | 285  | 171  | 51   | 382   | 0    |
| RTOR Reduction (vph)   | 0     | 26    | 0    | 0     | 0    | 207  | 0    | 99   | 0    | 0    | 0     | 0    |
| Lane Group Flow (vph)  | 160   | 1148  | 0    | 321   | 320  | 67   | 0    | 357  | 0    | 0    | 433   | 0    |
| Parking (#/hr)         |       | 0     | 0    |       |      | 0    |      | 0    | 0    |      | 0     |      |
| Turn Type              | Split |       |      | Split |      | Perm |      |      | Perm |      |       |      |
| Protected Phases       | 2     | 2     |      | 6     | 6    |      |      | 8    |      |      |       | 4    |
| Permitted Phases       |       |       |      |       |      | 6    |      |      |      | 4    |       |      |
| Actuated Green, G (s)  | 39.0  | 39.0  |      | 23.0  | 23.0 | 23.0 |      | 19.0 |      |      | 19.0  |      |
| Effective Green, g (s) | 38.0  | 38.0  |      | 22.0  | 22.0 | 22.0 |      | 18.0 |      |      | 18.0  |      |
| Actuated g/C Ratio     | 0.42  | 0.42  |      | 0.24  | 0.24 | 0.24 |      | 0.20 |      |      | 0.20  |      |
| Clearance Time (s)     | 3.0   | 3.0   |      | 3.0   | 3.0  | 3.0  |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)     | 747   | 1376  |      | 411   | 411  | 348  |      | 635  |      |      | 504   |      |
| v/s Ratio Prot         | 0.09  | c0.35 |      | c0.19 | 0.19 |      |      | 0.11 |      |      |       |      |
| v/s Ratio Perm         |       |       |      |       |      | 0.05 |      |      |      |      | c0.17 |      |
| v/c Ratio              | 0.21  | 0.83  |      | 0.78  | 0.78 | 0.19 |      | 0.56 |      |      | 0.86  |      |
| Uniform Delay, d1      | 16.5  | 23.2  |      | 31.8  | 31.7 | 27.0 |      | 32.4 |      |      | 34.8  |      |
| Progression Factor     | 0.56  | 0.44  |      | 1.00  | 1.00 | 1.00 |      | 0.73 |      |      | 1.00  |      |
| Incremental Delay, d2  | 0.6   | 5.7   |      | 13.7  | 13.6 | 1.2  |      | 3.3  |      |      | 17.1  |      |
| Delay (s)              | 9.8   | 15.9  |      | 45.5  | 45.3 | 28.2 |      | 26.9 |      |      | 51.9  |      |
| Level of Service       | A     | B     |      | D     | D    | C    |      | C    |      |      | D     |      |
| Approach Delay (s)     |       | 15.2  |      |       | 40.2 |      |      | 26.9 |      |      | 51.9  |      |
| Approach LOS           |       | B     |      |       | D    |      |      | C    |      |      | D     |      |

**Intersection Summary**

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 29.3  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.83  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 90.0% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3435: N Street & 29th Street

4/4/2005



| Movement               | EBT   | EBR  | EBR2 | WBL2  | WBL   | WBT  | SBL2 | SBL   | SBT  | SBR  |
|------------------------|-------|------|------|-------|-------|------|------|-------|------|------|
| Lane Configurations    | ↑     | ↗    |      |       | ↖     | ↖    |      | ↗     | ↑    | ↘    |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900  | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    | 4.0   | 4.0  |      |       | 4.0   | 4.0  |      | 4.0   | 4.0  |      |
| Lane Util. Factor      | 1.00  | 1.00 |      |       | 0.95  | 0.95 |      | 0.97  | 0.95 |      |
| Frnt                   | 1.00  | 0.85 |      |       | 1.00  | 1.00 |      | 1.00  | 1.00 |      |
| Flt Protected          | 1.00  | 1.00 |      |       | 0.95  | 1.00 |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)      | 1676  | 1425 |      |       | 1681  | 1770 |      | 3433  | 3362 |      |
| Flt Permitted          | 1.00  | 1.00 |      |       | 0.95  | 1.00 |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)      | 1676  | 1425 |      |       | 1681  | 1770 |      | 3433  | 3362 |      |
| Volume (vph)           | 455   | 163  | 145  | 136   | 146   | 290  | 170  | 1114  | 766  | 1    |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 455   | 163  | 145  | 136   | 146   | 290  | 170  | 1114  | 766  | 1    |
| RTOR Reduction (vph)   | 0     | 36   | 0    | 0     | 0     | 0    | 0    | 0     | 0    | 0    |
| Lane Group Flow (vph)  | 455   | 272  | 0    | 0     | 282   | 290  | 0    | 1284  | 767  | 0    |
| Parking (#/hr)         | 0     | 0    | 0    |       |       |      |      |       | 0    |      |
| Turn Type              |       | Perm |      | Split | Split |      | Perm | Perm  |      |      |
| Protected Phases       | 4     |      |      | 8     | 8     | 8    |      |       | 6    |      |
| Permitted Phases       |       | 4    |      |       |       |      | 6    | 6     |      |      |
| Actuated Green, G (s)  | 27.0  | 27.0 |      |       | 17.0  | 17.0 |      | 37.0  | 37.0 |      |
| Effective Green, g (s) | 26.0  | 26.0 |      |       | 16.0  | 16.0 |      | 36.0  | 36.0 |      |
| Actuated g/C Ratio     | 0.29  | 0.29 |      |       | 0.18  | 0.18 |      | 0.40  | 0.40 |      |
| Clearance Time (s)     | 3.0   | 3.0  |      |       | 3.0   | 3.0  |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     | 484   | 412  |      |       | 299   | 315  |      | 1373  | 1345 |      |
| v/s Ratio Prot         | c0.27 |      |      |       | c0.17 | 0.16 |      |       | 0.23 |      |
| v/s Ratio Perm         |       | 0.19 |      |       |       |      |      | c0.37 |      |      |
| v/c Ratio              | 0.94  | 0.66 |      |       | 0.94  | 0.92 |      | 0.94  | 0.57 |      |
| Uniform Delay, d1      | 31.2  | 28.1 |      |       | 36.6  | 36.4 |      | 25.9  | 21.0 |      |
| Progression Factor     | 0.98  | 0.99 |      |       | 0.66  | 0.65 |      | 0.48  | 0.42 |      |
| Incremental Delay, d2  | 25.5  | 6.9  |      |       | 34.4  | 29.4 |      | 8.7   | 1.1  |      |
| Delay (s)              | 56.1  | 34.7 |      |       | 58.4  | 53.1 |      | 21.2  | 9.9  |      |
| Level of Service       | E     | C    |      |       | E     | D    |      | C     | A    |      |
| Approach Delay (s)     | 47.5  |      |      |       |       | 55.7 |      |       | 17.0 |      |
| Approach LOS           | D     |      |      |       |       | E    |      |       | B    |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 30.4  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.94  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 86.0% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3436: Capitol & Alhambra

4/4/2005



| Movement               | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL  | NBT  | NBR  | SBL   | SBT  | SBR  |
|------------------------|-------|-------|------|-------|-------|------|------|------|------|-------|------|------|
| Lane Configurations    |       | ↔     |      |       | ↔     |      | ↗    | ↖    | ↗    | ↖     | ↖    | ↗    |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    |       | 4.0   |      |       | 4.0   |      | 4.0  | 4.0  | 4.0  | 4.0   | 4.0  | 4.0  |
| Lane Util. Factor      |       | 0.95  |      |       | 0.95  |      | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Fr't                   |       | 0.99  |      |       | 0.97  |      | 1.00 | 1.00 | 0.85 | 1.00  | 1.00 | 0.85 |
| Flt Protected          |       | 0.99  |      |       | 1.00  |      | 0.95 | 1.00 | 1.00 | 0.95  | 1.00 | 1.00 |
| Satd. Flow (prot)      |       | 3312  |      |       | 3245  |      | 1593 | 1676 | 1425 | 1593  | 1676 | 1425 |
| Flt Permitted          |       | 0.99  |      |       | 1.00  |      | 0.32 | 1.00 | 1.00 | 0.25  | 1.00 | 1.00 |
| Satd. Flow (perm)      |       | 3312  |      |       | 3245  |      | 544  | 1676 | 1425 | 422   | 1676 | 1425 |
| Volume (vph)           | 79    | 429   | 28   | 49    | 619   | 181  | 54   | 539  | 81   | 168   | 461  | 82   |
| Peak-hour factor, PHF  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 79    | 429   | 28   | 49    | 619   | 181  | 54   | 539  | 81   | 168   | 461  | 82   |
| RTOR Reduction (vph)   | 0     | 4     | 0    | 0     | 28    | 0    | 0    | 0    | 30   | 0     | 0    | 36   |
| Lane Group Flow (vph)  | 0     | 532   | 0    | 0     | 821   | 0    | 54   | 539  | 51   | 168   | 461  | 46   |
| Parking (#/hr)         | 0     | 0     | 0    | 0     | 0     | 0    | 0    | 0    | 0    | 0     | 0    | 0    |
| Turn Type              | Split |       |      | Split |       |      | Perm |      | Perm | Perm  |      | Perm |
| Protected Phases       | 4     | 4     |      | 8     | 8     |      |      | 2    |      |       |      | 6    |
| Permitted Phases       |       |       |      |       |       |      | 2    |      | 2    | 6     |      | 6    |
| Actuated Green, G (s)  |       | 17.0  |      |       | 24.0  |      | 40.0 | 40.0 | 40.0 | 40.0  | 40.0 | 40.0 |
| Effective Green, g (s) |       | 16.0  |      |       | 23.0  |      | 39.0 | 39.0 | 39.0 | 39.0  | 39.0 | 39.0 |
| Actuated g/C Ratio     |       | 0.18  |      |       | 0.26  |      | 0.43 | 0.43 | 0.43 | 0.43  | 0.43 | 0.43 |
| Clearance Time (s)     |       | 3.0   |      |       | 3.0   |      | 3.0  | 3.0  | 3.0  | 3.0   | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |       | 589   |      |       | 829   |      | 236  | 726  | 618  | 183   | 726  | 618  |
| v/s Ratio Prot         |       | c0.16 |      |       | c0.25 |      |      | 0.32 |      |       | 0.27 |      |
| v/s Ratio Perm         |       |       |      |       |       |      | 0.10 |      | 0.04 | c0.40 |      | 0.03 |
| v/c Ratio              |       | 0.90  |      |       | 0.99  |      | 0.23 | 0.74 | 0.08 | 0.92  | 0.63 | 0.07 |
| Uniform Delay, d1      |       | 36.2  |      |       | 33.4  |      | 16.0 | 21.3 | 15.0 | 24.0  | 19.9 | 14.9 |
| Progression Factor     |       | 0.64  |      |       | 1.00  |      | 0.41 | 0.41 | 0.10 | 0.96  | 0.96 | 0.84 |
| Incremental Delay, d2  |       | 19.2  |      |       | 29.1  |      | 1.2  | 3.7  | 0.1  | 40.4  | 3.2  | 0.2  |
| Delay (s)              |       | 42.6  |      |       | 62.5  |      | 7.8  | 12.4 | 1.6  | 63.3  | 22.3 | 12.7 |
| Level of Service       |       | D     |      |       | E     |      | A    | B    | A    | E     | C    | B    |
| Approach Delay (s)     |       | 42.6  |      |       | 62.5  |      |      | 10.7 |      |       | 30.9 |      |
| Approach LOS           |       | D     |      |       | E     |      |      | B    |      |       | C    |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 38.0  | HCM Level of Service | D    |
| HCM Volume to Capacity ratio      | 0.94  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 90.4% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3437: P Street & 29th St off ramp

4/4/2005



| Movement                          | WBL  | WBT   | SBT   | SBR  | SWL   | SWR  |
|-----------------------------------|------|-------|-------|------|-------|------|
| Lane Configurations               | ↖    | ↑↑    | ↑↑↓   |      | ↖↖    | ↗    |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900  | 1900 | 1900  | 1900 |
| Total Lost time (s)               | 4.0  | 4.0   | 4.0   |      | 4.0   | 4.0  |
| Lane Util. Factor                 | 1.00 | 0.95  | 0.91  |      | 0.97  | 0.91 |
| Fr <sub>t</sub>                   | 1.00 | 1.00  | 0.98  |      | 0.99  | 0.85 |
| Fl <sub>t</sub> Protected         | 0.95 | 1.00  | 1.00  |      | 0.95  | 1.00 |
| Satd. Flow (prot)                 | 1593 | 3362  | 4823  |      | 3427  | 1441 |
| Fl <sub>t</sub> Permitted         | 0.95 | 1.00  | 1.00  |      | 0.95  | 1.00 |
| Satd. Flow (perm)                 | 1593 | 3362  | 4823  |      | 3427  | 1441 |
| Volume (vph)                      | 153  | 842   | 872   | 125  | 361   | 174  |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)                   | 153  | 842   | 872   | 125  | 361   | 174  |
| RTOR Reduction (vph)              | 39   | 0     | 21    | 0    | 0     | 0    |
| Lane Group Flow (vph)             | 114  | 842   | 976   | 0    | 377   | 158  |
| Parking (#/hr)                    | 0    | 0     | 0     | 0    |       |      |
| Turn Type                         | Perm |       |       |      |       | Perm |
| Protected Phases                  |      | 6     | 7     |      | 8     |      |
| Permitted Phases                  | 6    |       |       |      |       | 8    |
| Actuated Green, G (s)             | 33.0 | 33.0  | 28.0  |      | 20.0  | 20.0 |
| Effective Green, g (s)            | 32.0 | 32.0  | 27.0  |      | 19.0  | 19.0 |
| Actuated g/C Ratio                | 0.36 | 0.36  | 0.30  |      | 0.21  | 0.21 |
| Clearance Time (s)                | 3.0  | 3.0   | 3.0   |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)                | 566  | 1195  | 1447  |      | 723   | 304  |
| v/s Ratio Prot                    |      | c0.25 | c0.20 |      | c0.11 |      |
| v/s Ratio Perm                    | 0.07 |       |       |      |       | 0.11 |
| v/c Ratio                         | 0.20 | 0.70  | 0.67  |      | 0.52  | 0.52 |
| Uniform Delay, d <sub>1</sub>     | 20.1 | 24.9  | 27.6  |      | 31.5  | 31.5 |
| Progression Factor                | 0.05 | 0.33  | 0.64  |      | 1.00  | 1.00 |
| Incremental Delay, d <sub>2</sub> | 0.6  | 2.7   | 2.0   |      | 2.7   | 6.2  |
| Delay (s)                         | 1.7  | 10.8  | 19.7  |      | 34.1  | 37.7 |
| Level of Service                  | A    | B     | B     |      | C     | D    |
| Approach Delay (s)                |      | 9.4   | 19.7  |      | 35.2  |      |
| Approach LOS                      |      | A     | B     |      | D     |      |

**Intersection Summary**

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 18.9  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.65  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 65.0% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |



HCM Signalized Intersection Capacity Analysis  
 3438: P Street & Alhambra

4/4/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL   | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|-------|------|-------|------|------|
| Lane Configurations    |      |      |      |      | ↔↕↔  |      | ↕    | ↕     |      | ↕     | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      | 4.0  | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor      |      |      |      |      | 0.91 |      | 1.00 | 1.00  |      | 1.00  | 1.00 |      |
| Frt                    |      |      |      |      | 0.98 |      | 1.00 | 0.94  |      | 1.00  | 0.97 |      |
| Flt Protected          |      |      |      |      | 1.00 |      | 0.95 | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)      |      |      |      |      | 4953 |      | 1770 | 1743  |      | 1770  | 1814 |      |
| Flt Permitted          |      |      |      |      | 1.00 |      | 0.95 | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)      |      |      |      |      | 4953 |      | 1770 | 1743  |      | 1770  | 1814 |      |
| Volume (vph)           | 0    | 0    | 0    | 73   | 948  | 185  | 124  | 391   | 292  | 311   | 410  | 86   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 73   | 948  | 185  | 124  | 391   | 292  | 311   | 410  | 86   |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 29   | 0    | 0    | 30    | 0    | 0     | 8    | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 1177 | 0    | 124  | 653   | 0    | 311   | 488  | 0    |
| Turn Type              |      |      |      | Perm |      |      | Prot |       |      | Prot  |      |      |
| Protected Phases       |      |      |      |      | 6    |      | 3    | 8     |      | 7     | 4    |      |
| Permitted Phases       |      |      |      | 6    |      |      |      |       |      |       |      |      |
| Actuated Green, G (s)  |      |      |      |      | 24.0 |      | 13.0 | 38.0  |      | 19.0  | 44.0 |      |
| Effective Green, g (s) |      |      |      |      | 23.0 |      | 12.0 | 37.0  |      | 18.0  | 43.0 |      |
| Actuated g/C Ratio     |      |      |      |      | 0.26 |      | 0.13 | 0.41  |      | 0.20  | 0.48 |      |
| Clearance Time (s)     |      |      |      |      | 3.0  |      | 3.0  | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     |      |      |      |      | 1266 |      | 236  | 717   |      | 354   | 867  |      |
| v/s Ratio Prot         |      |      |      |      |      |      | 0.07 | c0.37 |      | c0.18 | 0.27 |      |
| v/s Ratio Perm         |      |      |      |      | 0.24 |      |      |       |      |       |      |      |
| v/c Ratio              |      |      |      |      | 0.93 |      | 0.53 | 0.91  |      | 0.88  | 0.56 |      |
| Uniform Delay, d1      |      |      |      |      | 32.7 |      | 36.3 | 24.9  |      | 34.9  | 16.8 |      |
| Progression Factor     |      |      |      |      | 1.00 |      | 1.00 | 1.00  |      | 0.88  | 0.78 |      |
| Incremental Delay, d2  |      |      |      |      | 13.2 |      | 8.1  | 17.8  |      | 15.7  | 1.5  |      |
| Delay (s)              |      |      |      |      | 46.0 |      | 44.5 | 42.7  |      | 46.4  | 14.6 |      |
| Level of Service       |      |      |      |      | D    |      | D    | D     |      | D     | B    |      |
| Approach Delay (s)     |      | 0.0  |      |      | 46.0 |      |      | 43.0  |      |       | 26.8 |      |
| Approach LOS           |      | A    |      |      | D    |      |      | D     |      |       | C    |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 39.6  | HCM Level of Service | D    |
| HCM Volume to Capacity ratio      | 0.91  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 89.6% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 3444: Q Street & 29th Street

4/4/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|-------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑↑    |      |      |      |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      |      |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 0.95  |      |      |      |      |      |      |      |      | 0.91 |      |
| Frt                    |      | 0.95  |      |      |      |      |      |      |      |      | 1.00 |      |
| Flt Protected          |      | 1.00  |      |      |      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (prot)      |      | 3355  |      |      |      |      |      |      |      |      | 5055 |      |
| Flt Permitted          |      | 1.00  |      |      |      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (perm)      |      | 3355  |      |      |      |      |      |      |      |      | 5055 |      |
| Volume (vph)           | 0    | 581   | 309  | 0    | 0    | 0    | 0    | 0    | 0    | 172  | 1241 | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 581   | 309  | 0    | 0    | 0    | 0    | 0    | 0    | 172  | 1241 | 0    |
| RTOR Reduction (vph)   | 0    | 13    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 20   | 0    |
| Lane Group Flow (vph)  | 0    | 877   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1393 | 0    |
| Turn Type              |      |       |      |      |      |      |      |      |      | Perm |      |      |
| Protected Phases       |      | 2     |      |      |      |      |      |      |      |      |      | 4    |
| Permitted Phases       |      |       |      |      |      |      |      |      |      | 4    |      |      |
| Actuated Green, G (s)  |      | 43.0  |      |      |      |      |      |      |      |      | 41.0 |      |
| Effective Green, g (s) |      | 42.0  |      |      |      |      |      |      |      |      | 40.0 |      |
| Actuated g/C Ratio     |      | 0.47  |      |      |      |      |      |      |      |      | 0.44 |      |
| Clearance Time (s)     |      | 3.0   |      |      |      |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 1566  |      |      |      |      |      |      |      |      | 2247 |      |
| v/s Ratio Prot         |      | c0.26 |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |       |      |      |      |      |      |      |      |      | 0.28 |      |
| v/c Ratio              |      | 0.56  |      |      |      |      |      |      |      |      | 0.62 |      |
| Uniform Delay, d1      |      | 17.3  |      |      |      |      |      |      |      |      | 19.2 |      |
| Progression Factor     |      | 1.00  |      |      |      |      |      |      |      |      | 0.34 |      |
| Incremental Delay, d2  |      | 1.5   |      |      |      |      |      |      |      |      | 1.1  |      |
| Delay (s)              |      | 18.8  |      |      |      |      |      |      |      |      | 7.5  |      |
| Level of Service       |      | B     |      |      |      |      |      |      |      |      | A    |      |
| Approach Delay (s)     |      | 18.8  |      |      | 0.0  |      |      | 0.0  |      |      | 7.5  |      |
| Approach LOS           |      | B     |      |      | A    |      |      | A    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.9  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.59  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 60.1% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3467: N Street & Alhambra

4/4/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|-------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations    |      | ↕     |      |      | ↕    |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      | 4.0  |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00  |      |      | 1.00 |      |      | 1.00  |      |      | 1.00 |      |
| Fr't                   |      | 0.94  |      |      | 0.99 |      |      | 0.99  |      |      | 0.99 |      |
| Flt Protected          |      | 0.99  |      |      | 0.99 |      |      | 1.00  |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 1566  |      |      | 1641 |      |      | 1654  |      |      | 1652 |      |
| Flt Permitted          |      | 0.87  |      |      | 0.84 |      |      | 0.98  |      |      | 0.99 |      |
| Satd. Flow (perm)      |      | 1374  |      |      | 1396 |      |      | 1619  |      |      | 1639 |      |
| Volume (vph)           | 127  | 244   | 269  | 54   | 215  | 26   | 19   | 506   | 51   | 9    | 489  | 56   |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 127  | 244   | 269  | 54   | 215  | 26   | 19   | 506   | 51   | 9    | 489  | 56   |
| RTOR Reduction (vph)   | 0    | 29    | 0    | 0    | 4    | 0    | 0    | 4     | 0    | 0    | 5    | 0    |
| Lane Group Flow (vph)  | 0    | 611   |      | 0    | 0    | 291  | 0    | 0     | 572  | 0    | 0    | 549  |
| Parking (#/hr)         | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |       |      | Perm |      |      | Perm |       |      | Perm |      |      |
| Protected Phases       |      | 4     |      |      | 8    |      |      | 2     |      |      | 6    |      |
| Permitted Phases       | 4    |       |      | 8    |      |      | 2    |       |      | 6    |      |      |
| Actuated Green, G (s)  |      | 46.0  |      |      | 46.0 |      |      | 38.0  |      |      | 38.0 |      |
| Effective Green, g (s) |      | 45.0  |      |      | 45.0 |      |      | 37.0  |      |      | 37.0 |      |
| Actuated g/C Ratio     |      | 0.50  |      |      | 0.50 |      |      | 0.41  |      |      | 0.41 |      |
| Clearance Time (s)     |      | 3.0   |      |      | 3.0  |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 687   |      |      | 698  |      |      | 666   |      |      | 674  |      |
| v/s Ratio Prot         |      |       |      |      |      |      |      |       |      |      |      |      |
| v/s Ratio Perm         |      | c0.44 |      |      | 0.21 |      |      | c0.35 |      |      | 0.34 |      |
| v/c Ratio              |      | 0.89  |      |      | 0.42 |      |      | 0.86  |      |      | 0.81 |      |
| Uniform Delay, d1      |      | 20.3  |      |      | 14.2 |      |      | 24.1  |      |      | 23.5 |      |
| Progression Factor     |      | 0.45  |      |      | 1.00 |      |      | 0.93  |      |      | 0.67 |      |
| Incremental Delay, d2  |      | 12.1  |      |      | 1.8  |      |      | 5.7   |      |      | 8.0  |      |
| Delay (s)              |      | 21.2  |      |      | 16.0 |      |      | 28.1  |      |      | 23.7 |      |
| Level of Service       |      | C     |      |      | B    |      |      | C     |      |      | C    |      |
| Approach Delay (s)     |      | 21.2  |      |      | 16.0 |      |      | 28.1  |      |      | 23.7 |      |
| Approach LOS           |      | C     |      |      | B    |      |      | C     |      |      | C    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 23.0  | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 0.88  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 97.0% | ICU Level of Service | F   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 5802: K Street & 29th Street

4/4/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑    | ↗    | ↖    | ↑     |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  | 4.0  | 4.0   |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00 | 1.00 | 1.00 | 1.00  |      |      |      |      |      | 0.91 |      |
| Frt                    |      | 1.00 | 0.85 | 1.00 | 1.00  |      |      |      |      |      | 0.98 |      |
| Flt Protected          |      | 1.00 | 1.00 | 0.95 | 1.00  |      |      |      |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 1863 | 1583 | 1770 | 1863  |      |      |      |      |      | 4961 |      |
| Flt Permitted          |      | 1.00 | 1.00 | 0.50 | 1.00  |      |      |      |      |      | 1.00 |      |
| Satd. Flow (perm)      |      | 1863 | 1583 | 933  | 1863  |      |      |      |      |      | 4961 |      |
| Volume (vph)           | 0    | 304  | 240  | 203  | 526   | 0    | 0    | 0    | 0    | 119  | 1168 | 204  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 304  | 240  | 203  | 526   | 0    | 0    | 0    | 0    | 119  | 1168 | 204  |
| RTOR Reduction (vph)   | 0    | 0    | 15   | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 24   | 0    |
| Lane Group Flow (vph)  | 0    | 304  | 225  | 203  | 526   | 0    | 0    | 0    | 0    | 0    | 1467 | 0    |
| Turn Type              |      |      | Perm | Perm |       |      |      |      |      |      | Perm |      |
| Protected Phases       |      | 4    |      |      | 8     |      |      |      |      |      |      | 6    |
| Permitted Phases       |      |      | 4    | 8    |       |      |      |      |      |      | 6    |      |
| Actuated Green, G (s)  |      | 44.0 | 44.0 | 44.0 | 44.0  |      |      |      |      |      | 40.0 |      |
| Effective Green, g (s) |      | 43.0 | 43.0 | 43.0 | 43.0  |      |      |      |      |      | 39.0 |      |
| Actuated g/C Ratio     |      | 0.48 | 0.48 | 0.48 | 0.48  |      |      |      |      |      | 0.43 |      |
| Clearance Time (s)     |      | 3.0  | 3.0  | 3.0  | 3.0   |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 890  | 756  | 446  | 890   |      |      |      |      |      | 2150 |      |
| v/s Ratio Prot         |      | 0.16 |      |      | c0.28 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      | 0.14 | 0.22 |       |      |      |      |      |      | 0.30 |      |
| v/c Ratio              |      | 0.34 | 0.30 | 0.46 | 0.59  |      |      |      |      |      | 0.68 |      |
| Uniform Delay, d1      |      | 14.7 | 14.3 | 15.7 | 17.1  |      |      |      |      |      | 20.5 |      |
| Progression Factor     |      | 0.56 | 0.52 | 0.36 | 0.36  |      |      |      |      |      | 1.04 |      |
| Incremental Delay, d2  |      | 1.0  | 0.9  | 2.7  | 2.4   |      |      |      |      |      | 1.3  |      |
| Delay (s)              |      | 9.2  | 8.3  | 8.3  | 8.5   |      |      |      |      |      | 22.7 |      |
| Level of Service       |      | A    | A    | A    | A     |      |      |      |      |      | C    |      |
| Approach Delay (s)     |      | 8.8  |      |      | 8.5   |      | 0.0  |      |      |      | 22.7 |      |
| Approach LOS           |      | A    |      |      | A     |      | A    |      |      |      | C    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 16.2  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.63  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 66.8% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 5848: J Street & 30th Street

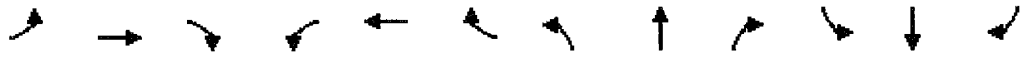
4/4/2005



| Movement                          | EBL2 | EBL  | EBT   | WBR2 | NBL                  | NBT  | NBR  |
|-----------------------------------|------|------|-------|------|----------------------|------|------|
| Lane Configurations               |      | ↘    | ↔↕↕   | ↗    | ↘                    | ↔↕   |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900                 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0  | 4.0   |      | 4.0                  | 4.0  |      |
| Lane Util. Factor                 |      | 0.86 | 0.86  |      | 0.91                 | 0.91 |      |
| Fr <sub>t</sub>                   |      | 1.00 | 1.00  |      | 1.00                 | 0.95 |      |
| Fl <sub>t</sub> Protected         |      | 0.95 | 1.00  |      | 0.95                 | 0.99 |      |
| Satd. Flow (prot)                 |      | 1522 | 4630  |      | 1610                 | 3209 |      |
| Fl <sub>t</sub> Permitted         |      | 0.95 | 1.00  |      | 0.95                 | 0.99 |      |
| Satd. Flow (perm)                 |      | 1522 | 4630  |      | 1610                 | 3209 |      |
| Volume (vph)                      | 230  | 240  | 1038  | 0    | 377                  | 294  | 170  |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00                 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 230  | 240  | 1038  | 0    | 377                  | 294  | 170  |
| RTOR Reduction (vph)              | 0    | 56   | 0     | 0    | 0                    | 37   | 0    |
| Lane Group Flow (vph)             | 0    | 337  | 1115  | 0    | 276                  | 528  | 0    |
| Parking (#/hr)                    |      |      | 0     | 0    |                      |      | 0    |
| Turn Type                         | Perm | Perm |       | Free | Perm                 |      |      |
| Protected Phases                  |      |      | 2     |      |                      | 8    |      |
| Permitted Phases                  | 2    | 2    |       | Free | 8                    |      |      |
| Actuated Green, G (s)             |      | 45.0 | 45.0  |      | 39.0                 | 39.0 |      |
| Effective Green, g (s)            |      | 44.0 | 44.0  |      | 38.0                 | 38.0 |      |
| Actuated g/C Ratio                |      | 0.49 | 0.49  |      | 0.42                 | 0.42 |      |
| Clearance Time (s)                |      | 3.0  | 3.0   |      | 3.0                  | 3.0  |      |
| Lane Grp Cap (vph)                |      | 744  | 2264  |      | 680                  | 1355 |      |
| v/s Ratio Prot                    |      |      |       |      |                      |      |      |
| v/s Ratio Perm                    |      | 0.22 | 0.24  |      | 0.17                 | 0.16 |      |
| v/c Ratio                         |      | 0.45 | 0.49  |      | 0.41                 | 0.39 |      |
| Uniform Delay, d1                 |      | 15.1 | 15.5  |      | 18.1                 | 18.0 |      |
| Progression Factor                |      | 0.15 | 0.36  |      | 0.24                 | 0.17 |      |
| Incremental Delay, d2             |      | 1.1  | 0.4   |      | 1.6                  | 0.7  |      |
| Delay (s)                         |      | 3.2  | 5.9   |      | 5.9                  | 3.7  |      |
| Level of Service                  |      | A    | A     |      | A                    | A    |      |
| Approach Delay (s)                |      |      | 5.2   |      |                      | 4.5  |      |
| Approach LOS                      |      |      | A     |      |                      | A    |      |
| <b>Intersection Summary</b>       |      |      |       |      |                      |      |      |
| HCM Average Control Delay         |      |      | 4.9   |      | HCM Level of Service |      | A    |
| HCM Volume to Capacity ratio      |      |      | 0.45  |      |                      |      |      |
| Actuated Cycle Length (s)         |      |      | 90.0  |      | Sum of lost time (s) |      | 8.0  |
| Intersection Capacity Utilization |      |      | 45.2% |      | ICU Level of Service |      | A    |
| Analysis Period (min)             |      |      | 15    |      |                      |      |      |
| c Critical Lane Group             |      |      |       |      |                      |      |      |

HCM Signalized Intersection Capacity Analysis  
 5849: L Street & 30th Street

4/4/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      |      | ↑↑↑  |      | ↗    | ↑↑↑  |      |      |      |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      | 4.0  | 4.0  |      |      |      |      |
| Lane Util. Factor      |      |      |      |      | 0.91 |      | 0.86 | 0.86 |      |      |      |      |
| Frt                    |      |      |      |      | 0.97 |      | 1.00 | 1.00 |      |      |      |      |
| Flt Protected          |      |      |      |      | 1.00 |      | 0.95 | 1.00 |      |      |      |      |
| Satd. Flow (prot)      |      |      |      |      | 4932 |      | 1522 | 4646 |      |      |      |      |
| Flt Permitted          |      |      |      |      | 1.00 |      | 0.95 | 1.00 |      |      |      |      |
| Satd. Flow (perm)      |      |      |      |      | 4932 |      | 1522 | 4646 |      |      |      |      |
| Volume (vph)           | 0    | 0    | 0    | 0    | 468  | 118  | 185  | 1180 | 0    | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 0    | 468  | 118  | 185  | 1180 | 0    | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 32   | 0    | 88   | 0    | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 554  | 0    | 97   | 1180 | 0    | 0    | 0    | 0    |
| Parking (#/hr)         |      |      |      |      |      | 0    |      | 0    |      |      |      |      |
| Turn Type              |      |      |      |      |      |      | Perm |      |      |      |      |      |
| Protected Phases       |      |      |      |      | 6    |      |      | 8    |      |      |      |      |
| Permitted Phases       |      |      |      |      |      |      | 8    |      |      |      |      |      |
| Actuated Green, G (s)  |      |      |      |      | 36.0 |      | 48.0 | 48.0 |      |      |      |      |
| Effective Green, g (s) |      |      |      |      | 35.0 |      | 47.0 | 47.0 |      |      |      |      |
| Actuated g/C Ratio     |      |      |      |      | 0.39 |      | 0.52 | 0.52 |      |      |      |      |
| Clearance Time (s)     |      |      |      |      | 3.0  |      | 3.0  | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)     |      |      |      |      | 1918 |      | 795  | 2426 |      |      |      |      |
| v/s Ratio Prot         |      |      |      |      | 0.11 |      |      | 0.25 |      |      |      |      |
| v/s Ratio Perm         |      |      |      |      |      |      | 0.06 |      |      |      |      |      |
| v/c Ratio              |      |      |      |      | 0.29 |      | 0.12 | 0.49 |      |      |      |      |
| Uniform Delay, d1      |      |      |      |      | 18.9 |      | 11.0 | 13.8 |      |      |      |      |
| Progression Factor     |      |      |      |      | 0.61 |      | 0.01 | 0.41 |      |      |      |      |
| Incremental Delay, d2  |      |      |      |      | 0.3  |      | 0.3  | 0.7  |      |      |      |      |
| Delay (s)              |      |      |      |      | 11.9 |      | 0.4  | 6.4  |      |      |      |      |
| Level of Service       |      |      |      |      | B    |      | A    | A    |      |      |      |      |
| Approach Delay (s)     |      | 0.0  |      |      | 11.9 |      |      | 5.6  |      |      | 0.0  |      |
| Approach LOS           |      | A    |      |      | B    |      |      | A    |      |      | A    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 7.5   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.40  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 50.0% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 5880: N Street & 30th Street

4/4/2005



| Movement                  | EBL  | EBT   | WBT  | WBR  | NBL  | NBT  | NBR   | NEL2 | NEL   | NER  |
|---------------------------|------|-------|------|------|------|------|-------|------|-------|------|
| Lane Configurations       | ↖    | ↑     | ↗    |      |      | ↖↗   |       |      | ↖↗    |      |
| Ideal Flow (vphpl)        | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 |
| Total Lost time (s)       | 4.0  | 4.0   | 4.0  |      |      | 4.0  |       |      | 4.0   |      |
| Lane Util. Factor         | 1.00 | 1.00  | 1.00 |      |      | 0.91 |       |      | 0.97  |      |
| Fr <sub>t</sub>           | 1.00 | 1.00  | 0.97 |      |      | 0.98 |       |      | 0.98  |      |
| Fl <sub>t</sub> Protected | 0.95 | 1.00  | 1.00 |      |      | 0.99 |       |      | 0.96  |      |
| Satd. Flow (prot)         | 1770 | 1863  | 1810 |      |      | 4970 |       |      | 3402  |      |
| Fl <sub>t</sub> Permitted | 0.52 | 1.00  | 1.00 |      |      | 0.99 |       |      | 0.96  |      |
| Satd. Flow (perm)         | 960  | 1863  | 1810 |      |      | 4970 |       |      | 3402  |      |
| Volume (vph)              | 92   | 541   | 211  | 56   | 70   | 362  | 50    | 285  | 355   | 81   |
| Peak-hour factor, PHF     | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)           | 92   | 541   | 211  | 56   | 70   | 362  | 50    | 285  | 355   | 81   |
| RTOR Reduction (vph)      | 0    | 0     | 10   | 0    | 0    | 15   | 0     | 0    | 0     | 0    |
| Lane Group Flow (vph)     | 92   | 541   | 257  | 0    | 0    | 467  | 0     | 0    | 721   | 0    |
| Turn Type                 | Perm |       |      | Perm |      |      | Split |      |       |      |
| Protected Phases          |      | 4     | 8    |      |      | 2    |       | 6    | 6     |      |
| Permitted Phases          | 4    |       |      |      | 2    |      |       |      |       |      |
| Actuated Green, G (s)     | 39.0 | 39.0  | 39.0 |      |      | 14.0 |       |      | 28.0  |      |
| Effective Green, g (s)    | 38.0 | 38.0  | 38.0 |      |      | 13.0 |       |      | 27.0  |      |
| Actuated g/C Ratio        | 0.42 | 0.42  | 0.42 |      |      | 0.14 |       |      | 0.30  |      |
| Clearance Time (s)        | 3.0  | 3.0   | 3.0  |      |      | 3.0  |       |      | 3.0   |      |
| Lane Grp Cap (vph)        | 405  | 787   | 764  |      |      | 718  |       |      | 1021  |      |
| v/s Ratio Prot            |      | c0.29 | 0.14 |      |      |      |       |      | c0.21 |      |
| v/s Ratio Perm            | 0.10 |       |      |      |      | 0.09 |       |      |       |      |
| v/c Ratio                 | 0.23 | 0.69  | 0.34 |      |      | 0.65 |       |      | 0.71  |      |
| Uniform Delay, d1         | 16.6 | 21.2  | 17.5 |      |      | 36.4 |       |      | 28.0  |      |
| Progression Factor        | 1.31 | 1.32  | 0.59 |      |      | 0.99 |       |      | 1.00  |      |
| Incremental Delay, d2     | 0.5  | 1.8   | 1.0  |      |      | 4.4  |       |      | 4.1   |      |
| Delay (s)                 | 22.3 | 29.8  | 11.3 |      |      | 40.4 |       |      | 32.1  |      |
| Level of Service          | C    | C     | B    |      |      | D    |       |      | C     |      |
| Approach Delay (s)        |      | 28.7  | 11.3 |      |      | 40.4 |       |      | 32.1  |      |
| Approach LOS              |      | C     | B    |      |      | D    |       |      | C     |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 30.3  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.69  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 68.8% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 5882: P Street & 30th Street

4/4/2005



| Movement               | WBT   | WBR  | WBR2 | NBL2 | NBL   | NBT  |
|------------------------|-------|------|------|------|-------|------|
| Lane Configurations    | ↑↑↑   |      |      |      | ↑     | ↑↑↑  |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0   |      |      |      | 4.0   | 4.0  |
| Lane Util. Factor      | 0.91  |      |      |      | 1.00  | 0.91 |
| Frt                    | 0.94  |      |      |      | 1.00  | 1.00 |
| Flt Protected          | 1.00  |      |      |      | 0.95  | 1.00 |
| Satd. Flow (prot)      | 4804  |      |      |      | 1593  | 4916 |
| Flt Permitted          | 1.00  |      |      |      | 0.95  | 1.00 |
| Satd. Flow (perm)      | 4804  |      |      |      | 1593  | 4916 |
| Volume (vph)           | 775   | 322  | 132  | 110  | 516   | 375  |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 775   | 322  | 132  | 110  | 516   | 375  |
| RTOR Reduction (vph)   | 16    | 0    | 0    | 0    | 9     | 0    |
| Lane Group Flow (vph)  | 1213  | 0    | 0    | 0    | 617   | 375  |
| Parking (#/hr)         |       | 0    | 0    | 0    | 0     | 0    |
| Turn Type              |       |      |      | Perm | Perm  |      |
| Protected Phases       | 6     |      |      |      |       | 8    |
| Permitted Phases       |       |      |      | 8    | 8     |      |
| Actuated Green, G (s)  | 32.0  |      |      |      | 52.0  | 52.0 |
| Effective Green, g (s) | 31.0  |      |      |      | 51.0  | 51.0 |
| Actuated g/C Ratio     | 0.34  |      |      |      | 0.57  | 0.57 |
| Clearance Time (s)     | 3.0   |      |      |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)     | 1655  |      |      |      | 903   | 2786 |
| v/s Ratio Prot         | c0.25 |      |      |      |       | 0.08 |
| v/s Ratio Perm         |       |      |      |      | c0.39 |      |
| v/c Ratio              | 0.73  |      |      |      | 0.68  | 0.13 |
| Uniform Delay, d1      | 25.9  |      |      |      | 13.8  | 9.1  |
| Progression Factor     | 0.32  |      |      |      | 1.00  | 1.00 |
| Incremental Delay, d2  | 1.6   |      |      |      | 4.2   | 0.1  |
| Delay (s)              | 9.9   |      |      |      | 18.0  | 9.2  |
| Level of Service       | A     |      |      |      | B     | A    |
| Approach Delay (s)     | 9.9   |      |      |      |       | 14.7 |
| Approach LOS           | A     |      |      |      |       | B    |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 12.1  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.70  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 66.5% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
 5886: Capitol & 30th Street

4/4/2005



| Movement               | EBL   | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|-------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    | ↘     | ↕    |      |      | ↕     |      |      | ↕    |      |      |      |      |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0   | 4.0  |      |      | 4.0   |      |      | 4.0  |      |      |      |      |
| Lane Util. Factor      | 1.00  | 0.95 |      |      | 0.95  |      |      | 0.91 |      |      |      |      |
| Fr't                   | 1.00  | 1.00 |      |      | 0.98  |      |      | 0.98 |      |      |      |      |
| Flt Protected          | 0.95  | 1.00 |      |      | 1.00  |      |      | 1.00 |      |      |      |      |
| Satd. Flow (prot)      | 1770  | 3539 |      |      | 3474  |      |      | 4954 |      |      |      |      |
| Flt Permitted          | 0.95  | 1.00 |      |      | 1.00  |      |      | 1.00 |      |      |      |      |
| Satd. Flow (perm)      | 1770  | 3539 |      |      | 3474  |      |      | 4954 |      |      |      |      |
| Volume (vph)           | 112   | 401  | 0    | 0    | 467   | 65   | 68   | 702  | 133  | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 112   | 401  | 0    | 0    | 467   | 65   | 68   | 702  | 133  | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0     | 0    | 0    | 0    | 12    | 0    | 0    | 27   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 112   | 401  | 0    | 0    | 520   | 0    | 0    | 876  | 0    | 0    | 0    | 0    |
| Turn Type              | Prot  |      |      | Perm |       |      |      |      |      |      |      |      |
| Protected Phases       | 7     | 4    |      |      | 8     |      |      | 2    |      |      |      |      |
| Permitted Phases       |       |      |      |      |       |      |      | 2    |      |      |      |      |
| Actuated Green, G (s)  | 21.0  | 53.0 |      |      | 29.0  |      |      | 31.0 |      |      |      |      |
| Effective Green, g (s) | 20.0  | 52.0 |      |      | 28.0  |      |      | 30.0 |      |      |      |      |
| Actuated g/C Ratio     | 0.22  | 0.58 |      |      | 0.31  |      |      | 0.33 |      |      |      |      |
| Clearance Time (s)     | 3.0   | 3.0  |      |      | 3.0   |      |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)     | 393   | 2045 |      |      | 1081  |      |      | 1651 |      |      |      |      |
| v/s Ratio Prot         | c0.06 | 0.11 |      |      | c0.15 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |       |      |      |      |       |      |      | 0.18 |      |      |      |      |
| v/c Ratio              | 0.28  | 0.20 |      |      | 0.48  |      |      | 0.53 |      |      |      |      |
| Uniform Delay, d1      | 29.1  | 9.0  |      |      | 25.1  |      |      | 24.3 |      |      |      |      |
| Progression Factor     | 1.11  | 1.37 |      |      | 0.35  |      |      | 0.75 |      |      |      |      |
| Incremental Delay, d2  | 1.5   | 0.2  |      |      | 0.8   |      |      | 1.0  |      |      |      |      |
| Delay (s)              | 33.8  | 12.6 |      |      | 9.5   |      |      | 19.1 |      |      |      |      |
| Level of Service       | C     | B    |      |      | A     |      |      | B    |      |      |      |      |
| Approach Delay (s)     |       | 17.2 |      |      | 9.5   |      |      | 19.1 |      |      | 0.0  |      |
| Approach LOS           |       | B    |      |      | A     |      |      | B    |      |      | A    |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 16.0  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.45  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 76.2% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
5888: Capitol & 29th Street

4/4/2005



| Movement               | EBL  | EBT  | EBR  | WBL   | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|-------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑↑   |      | ↖     | ↑↑   |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      | 4.0   | 4.0  |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 0.95 |      | 1.00  | 0.95 |      |      |      |      |      | 0.91 |      |
| Fr <sub>t</sub>        |      | 0.93 |      | 1.00  | 1.00 |      |      |      |      |      | 1.00 |      |
| Flt Protected          |      | 1.00 |      | 0.95  | 1.00 |      |      |      |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 3141 |      | 1770  | 3539 |      |      |      |      |      | 4883 |      |
| Flt Permitted          |      | 1.00 |      | 0.32  | 1.00 |      |      |      |      |      | 1.00 |      |
| Satd. Flow (perm)      |      | 3141 |      | 589   | 3539 |      |      |      |      |      | 4883 |      |
| Volume (vph)           | 0    | 394  | 307  | 198   | 413  | 0    | 0    | 0    | 0    | 123  | 1612 | 37   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 394  | 307  | 198   | 413  | 0    | 0    | 0    | 0    | 123  | 1612 | 37   |
| RTOR Reduction (vph)   | 0    | 3    | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 2    | 0    |
| Lane Group Flow (vph)  | 0    | 698  | 0    | 198   | 413  | 0    | 0    | 0    | 0    | 0    | 1770 | 0    |
| Parking (#/hr)         |      | 0    | 0    |       |      |      |      |      |      |      | 0    | 0    |
| Turn Type              |      |      |      | Perm  |      |      |      |      |      |      | Perm |      |
| Protected Phases       |      | 4    |      |       | 8    |      |      |      |      |      |      | 6    |
| Permitted Phases       |      |      |      |       | 8    |      |      |      |      |      | 6    |      |
| Actuated Green, G (s)  |      | 45.0 |      |       | 45.0 |      |      |      |      |      |      | 39.0 |
| Effective Green, g (s) |      | 44.0 |      |       | 44.0 |      |      |      |      |      |      | 38.0 |
| Actuated g/C Ratio     |      | 0.49 |      |       | 0.49 |      |      |      |      |      |      | 0.42 |
| Clearance Time (s)     |      | 3.0  |      |       | 3.0  |      |      |      |      |      |      | 3.0  |
| Lane Grp Cap (vph)     |      | 1536 |      | 288   | 1730 |      |      |      |      |      | 2062 |      |
| v/s Ratio Prot         |      | 0.22 |      |       | 0.12 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      |      | c0.34 |      |      |      |      |      |      | 0.36 |      |
| v/c Ratio              |      | 0.45 |      | 0.69  | 0.24 |      |      |      |      |      | 0.86 |      |
| Uniform Delay, d1      |      | 15.1 |      | 17.7  | 13.3 |      |      |      |      |      | 23.6 |      |
| Progression Factor     |      | 0.63 |      | 0.35  | 0.38 |      |      |      |      |      | 0.33 |      |
| Incremental Delay, d2  |      | 0.5  |      | 11.7  | 0.3  |      |      |      |      |      | 4.3  |      |
| Delay (s)              |      | 10.0 |      | 17.8  | 5.4  |      |      |      |      |      | 12.1 |      |
| Level of Service       |      | B    |      | B     | A    |      |      |      |      |      | B    |      |
| Approach Delay (s)     |      | 10.0 |      |       | 9.4  |      |      | 0.0  |      |      | 12.1 |      |
| Approach LOS           |      | B    |      |       | A    |      |      | A    |      |      | B    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.1  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.77  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 76.2% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis

5890: Capitol & 26th St

4/4/2005



| Movement                          | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|-----------------------------------|------|------|------|------|-------|------|------|------|------|------|-------|------|
| Lane Configurations               |      |      |      |      |       |      |      |      |      |      |       |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)               | 4.0  | 4.0  |      | 4.0  | 4.0   |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor                 | 1.00 | 1.00 |      | 1.00 | 1.00  |      |      | 1.00 |      |      | 1.00  |      |
| Fr <sub>t</sub>                   | 1.00 | 1.00 |      | 1.00 | 0.99  |      |      | 0.97 |      |      | 0.98  |      |
| Fl <sub>t</sub> Protected         | 0.95 | 1.00 |      | 0.95 | 1.00  |      |      | 1.00 |      |      | 0.98  |      |
| Satd. Flow (prot)                 | 1770 | 1672 |      | 1770 | 1667  |      |      | 1629 |      |      | 1623  |      |
| Fl <sub>t</sub> Permitted         | 0.31 | 1.00 |      | 0.32 | 1.00  |      |      | 0.99 |      |      | 0.92  |      |
| Satd. Flow (perm)                 | 575  | 1672 |      | 598  | 1667  |      |      | 1622 |      |      | 1515  |      |
| Volume (vph)                      | 11   | 605  | 10   | 20   | 610   | 23   | 3    | 55   | 14   | 28   | 50    | 11   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)                   | 11   | 605  | 10   | 20   | 610   | 23   | 3    | 55   | 14   | 28   | 50    | 11   |
| RTOR Reduction (vph)              | 0    | 1    | 0    | 0    | 2     | 0    | 0    | 10   | 0    | 0    | 8     | 0    |
| Lane Group Flow (vph)             | 11   | 614  | 0    | 20   | 631   | 0    | 0    | 62   | 0    | 0    | 81    | 0    |
| Parking (#/hr)                    |      | 0    | 0    |      | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Turn Type                         | Perm |      |      | Perm |       |      | Perm |      |      | Perm |       |      |
| Protected Phases                  |      | 4    |      |      | 8     |      |      | 2    |      |      | 6     |      |
| Permitted Phases                  | 4    |      |      | 8    |       |      | 2    |      |      | 6    |       |      |
| Actuated Green, G (s)             | 36.0 | 36.0 |      | 36.0 | 36.0  |      |      | 18.0 |      |      | 18.0  |      |
| Effective Green, g (s)            | 35.0 | 35.0 |      | 35.0 | 35.0  |      |      | 17.0 |      |      | 17.0  |      |
| Actuated g/C Ratio                | 0.58 | 0.58 |      | 0.58 | 0.58  |      |      | 0.28 |      |      | 0.28  |      |
| Clearance Time (s)                | 3.0  | 3.0  |      | 3.0  | 3.0   |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)                | 335  | 975  |      | 349  | 972   |      |      | 460  |      |      | 429   |      |
| v/s Ratio Prot                    |      | 0.37 |      |      | c0.38 |      |      |      |      |      |       |      |
| v/s Ratio Perm                    | 0.02 |      |      | 0.03 |       |      |      | 0.04 |      |      | c0.05 |      |
| v/c Ratio                         | 0.03 | 0.63 |      | 0.06 | 0.65  |      |      | 0.13 |      |      | 0.19  |      |
| Uniform Delay, d <sub>1</sub>     | 5.3  | 8.2  |      | 5.4  | 8.4   |      |      | 16.0 |      |      | 16.3  |      |
| Progression Factor                | 1.00 | 1.00 |      | 1.00 | 1.00  |      |      | 1.00 |      |      | 0.67  |      |
| Incremental Delay, d <sub>2</sub> | 0.2  | 3.1  |      | 0.3  | 3.4   |      |      | 0.6  |      |      | 1.0   |      |
| Delay (s)                         | 5.5  | 11.3 |      | 5.7  | 11.7  |      |      | 16.6 |      |      | 11.8  |      |
| Level of Service                  | A    | B    |      | A    | B     |      |      | B    |      |      | B     |      |
| Approach Delay (s)                |      | 11.2 |      |      | 11.6  |      |      | 16.6 |      |      | 11.8  |      |
| Approach LOS                      |      | B    |      |      | B     |      |      | B    |      |      | B     |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.7  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.50  |                      |     |
| Actuated Cycle Length (s)         | 60.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 51.7% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis

6481: J Street & 28th Street

4/4/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations    |      | ↕↕↕  |      |      |      |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      |      |      |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor      |      | 0.91 |      |      |      |      |      | 1.00  |      |      | 1.00 |      |
| Frt                    |      | 1.00 |      |      |      |      |      | 0.93  |      |      | 1.00 |      |
| Flt Protected          |      | 1.00 |      |      |      |      |      | 1.00  |      |      | 0.99 |      |
| Satd. Flow (prot)      |      | 4888 |      |      |      |      |      | 1554  |      |      | 1664 |      |
| Flt Permitted          |      | 1.00 |      |      |      |      |      | 1.00  |      |      | 0.95 |      |
| Satd. Flow (perm)      |      | 4888 |      |      |      |      |      | 1554  |      |      | 1590 |      |
| Volume (vph)           | 39   | 1957 | 65   | 0    | 0    | 0    | 0    | 167   | 196  | 9    | 49   | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 39   | 1957 | 65   | 0    | 0    | 0    | 0    | 167   | 196  | 9    | 49   | 0    |
| RTOR Reduction (vph)   | 0    | 4    | 0    | 0    | 0    | 0    | 0    | 4     | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 2057 | 0    | 0    | 0    | 0    | 0    | 359   | 0    | 0    | 58   | 0    |
| Parking (#/hr)         | 0    | 0    | 0    |      |      |      |      | 0     | 0    | 0    | 0    |      |
| Turn Type              | Perm |      |      |      |      |      | Perm |       |      |      |      |      |
| Protected Phases       |      | 4    |      |      |      |      |      | 2     |      |      |      | 6    |
| Permitted Phases       | 4    |      |      |      |      |      |      |       | 6    |      |      |      |
| Actuated Green, G (s)  |      | 49.0 |      |      |      |      |      | 35.0  |      |      |      | 35.0 |
| Effective Green, g (s) |      | 48.0 |      |      |      |      |      | 34.0  |      |      |      | 34.0 |
| Actuated g/C Ratio     |      | 0.53 |      |      |      |      |      | 0.38  |      |      |      | 0.38 |
| Clearance Time (s)     |      | 3.0  |      |      |      |      |      | 3.0   |      |      |      | 3.0  |
| Lane Grp Cap (vph)     |      | 2607 |      |      |      |      |      | 587   |      |      |      | 601  |
| v/s Ratio Prot         |      |      |      |      |      |      |      | c0.23 |      |      |      |      |
| v/s Ratio Perm         |      | 0.42 |      |      |      |      |      |       |      |      | 0.04 |      |
| v/c Ratio              |      | 0.79 |      |      |      |      |      | 0.61  |      |      |      | 0.10 |
| Uniform Delay, d1      |      | 16.9 |      |      |      |      |      | 22.7  |      |      |      | 18.1 |
| Progression Factor     |      | 1.00 |      |      |      |      |      | 0.93  |      |      |      | 1.00 |
| Incremental Delay, d2  |      | 2.5  |      |      |      |      |      | 4.6   |      |      |      | 0.3  |
| Delay (s)              |      | 19.4 |      |      |      |      |      | 25.8  |      |      |      | 18.4 |
| Level of Service       |      | B    |      |      |      |      |      | C     |      |      |      | B    |
| Approach Delay (s)     |      | 19.4 |      |      |      | 0.0  |      | 25.8  |      |      |      | 18.4 |
| Approach LOS           |      | B    |      |      |      | A    |      | C     |      |      |      | B    |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 20.3  | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 0.72  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 67.5% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
6482: K Street & 28th Street

4/4/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↕    | ↗    |      | ↕    | ↗    |      | ↕    | ↗    |      | ↕    | ↗    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  |      | 4.0  | 4.0  |      | 4.0  | 4.0  |      | 4.0  | 4.0  |
| Lane Util. Factor      |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |
| Frt                    |      | 1.00 | 0.85 |      | 1.00 | 0.85 |      | 1.00 | 0.85 |      | 1.00 | 0.85 |
| Flt Protected          |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 0.99 | 1.00 |      | 0.99 | 1.00 |
| Satd. Flow (prot)      |      | 1674 | 1425 |      | 1672 | 1425 |      | 1656 | 1425 |      | 1654 | 1425 |
| Flt Permitted          |      | 0.98 | 1.00 |      | 0.96 | 1.00 |      | 0.89 | 1.00 |      | 0.87 | 1.00 |
| Satd. Flow (perm)      |      | 1645 | 1425 |      | 1611 | 1425 |      | 1486 | 1425 |      | 1452 | 1425 |
| Volume (vph)           | 14   | 451  | 27   | 34   | 574  | 115  | 61   | 184  | 66   | 50   | 130  | 32   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 14   | 451  | 27   | 34   | 574  | 115  | 61   | 184  | 66   | 50   | 130  | 32   |
| RTOR Reduction (vph)   | 0    | 0    | 8    | 0    | 0    | 26   | 0    | 0    | 45   | 0    | 0    | 22   |
| Lane Group Flow (vph)  | 0    | 465  | 19   | 0    | 608  | 89   | 0    | 245  | 21   | 0    | 180  | 10   |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      | Perm | Perm |      | Perm | Perm |      | Perm | Perm |      | Perm |
| Protected Phases       |      | 4    |      |      | 8    |      |      | 2    |      |      | 6    |      |
| Permitted Phases       | 4    |      | 4    | 8    |      | 8    | 2    |      | 2    | 6    |      | 6    |
| Actuated Green, G (s)  |      | 54.0 | 54.0 |      | 54.0 | 54.0 |      | 30.0 | 30.0 |      | 30.0 | 30.0 |
| Effective Green, g (s) |      | 53.0 | 53.0 |      | 53.0 | 53.0 |      | 29.0 | 29.0 |      | 29.0 | 29.0 |
| Actuated g/C Ratio     |      | 0.59 | 0.59 |      | 0.59 | 0.59 |      | 0.32 | 0.32 |      | 0.32 | 0.32 |
| Clearance Time (s)     |      | 3.0  | 3.0  |      | 3.0  | 3.0  |      | 3.0  | 3.0  |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |      | 969  | 839  |      | 949  | 839  |      | 479  | 459  |      | 468  | 459  |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      | 0.28 | 0.01 |      | 0.38 | 0.06 |      | 0.16 | 0.01 |      | 0.12 | 0.01 |
| v/c Ratio              |      | 0.48 | 0.02 |      | 0.64 | 0.11 |      | 0.51 | 0.05 |      | 0.38 | 0.02 |
| Uniform Delay, d1      |      | 10.6 | 7.7  |      | 12.2 | 8.1  |      | 24.8 | 21.0 |      | 23.6 | 20.8 |
| Progression Factor     |      | 1.00 | 1.00 |      | 0.47 | 0.44 |      | 1.00 | 1.74 |      | 1.09 | 1.15 |
| Incremental Delay, d2  |      | 1.7  | 0.1  |      | 2.6  | 0.2  |      | 3.4  | 0.2  |      | 2.3  | 0.1  |
| Delay (s)              |      | 12.3 | 7.8  |      | 8.3  | 3.8  |      | 28.1 | 36.7 |      | 28.1 | 24.1 |
| Level of Service       |      | B    | A    |      | A    | A    |      | C    | D    |      | C    | C    |
| Approach Delay (s)     |      | 12.1 |      |      | 7.6  |      |      | 30.0 |      |      | 27.5 |      |
| Approach LOS           |      | B    |      |      | A    |      |      | C    |      |      | C    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 15.3  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.60  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 90.7% | ICU Level of Service | E   |
| Analysis Period (min)             | 15    |                      |     |
| c - Critical Lane Group           |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
6483: L Street & 28th Street

4/4/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT  | WBR  | NBL  | NBT                  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|-------|------|------|------|------|----------------------|------|------|------|------|
| Lane Configurations               |      |      |       |      | ↕↕   |      |      | ↕                    |      |      | ↕    |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      |      |       |      | 4.0  |      |      | 4.0                  |      |      | 4.0  |      |
| Lane Util. Factor                 |      |      |       |      | 0.95 |      |      | 1.00                 |      |      | 1.00 |      |
| Fr <sub>t</sub>                   |      |      |       |      | 0.98 |      |      | 1.00                 |      |      | 0.98 |      |
| Fl <sub>t</sub> Protected         |      |      |       |      | 1.00 |      |      | 0.99                 |      |      | 1.00 |      |
| Satd. Flow (prot)                 |      |      |       |      | 3293 |      |      | 1654                 |      |      | 1638 |      |
| Fl <sub>t</sub> Permitted         |      |      |       |      | 1.00 |      |      | 0.86                 |      |      | 1.00 |      |
| Satd. Flow (perm)                 |      |      |       |      | 3293 |      |      | 1449                 |      |      | 1638 |      |
| Volume (vph)                      | 0    | 0    | 0     | 20   | 648  | 99   | 96   | 259                  | 0    | 0    | 163  | 33   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 20   | 648  | 99   | 96   | 259                  | 0    | 0    | 163  | 33   |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 0    | 13   | 0    | 0    | 0                    | 0    | 0    | 8    | 0    |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 0    | 754  | 0    | 0    | 355                  | 0    | 0    | 188  | 0    |
| Parking (#/hr)                    | 0    | 0    | 0     | 0    | 0    | 0    | 0    | 0                    | 0    | 0    | 0    | 0    |
| Turn Type                         |      |      |       |      | Perm |      |      | Perm                 |      |      |      |      |
| Protected Phases                  |      |      |       |      | 6    |      |      | 8                    |      |      | 4    |      |
| Permitted Phases                  |      |      |       |      | 6    |      |      | 8                    |      |      |      |      |
| Actuated Green, G (s)             |      |      |       |      | 40.0 |      |      | 44.0                 |      |      | 44.0 |      |
| Effective Green, g (s)            |      |      |       |      | 39.0 |      |      | 43.0                 |      |      | 43.0 |      |
| Actuated g/C Ratio                |      |      |       |      | 0.43 |      |      | 0.48                 |      |      | 0.48 |      |
| Clearance Time (s)                |      |      |       |      | 3.0  |      |      | 3.0                  |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |      |      |       |      | 1427 |      |      | 692                  |      |      | 783  |      |
| v/s Ratio Prot                    |      |      |       |      |      |      |      |                      |      |      | 0.11 |      |
| v/s Ratio Perm                    |      |      |       |      | 0.23 |      |      | c0.25                |      |      |      |      |
| v/c Ratio                         |      |      |       |      | 0.53 |      |      | 0.51                 |      |      | 0.24 |      |
| Uniform Delay, d <sub>1</sub>     |      |      |       |      | 18.7 |      |      | 16.3                 |      |      | 13.9 |      |
| Progression Factor                |      |      |       |      | 0.50 |      |      | 0.74                 |      |      | 0.39 |      |
| Incremental Delay, d <sub>2</sub> |      |      |       |      | 1.4  |      |      | 2.1                  |      |      | 0.7  |      |
| Delay (s)                         |      |      |       |      | 10.7 |      |      | 14.2                 |      |      | 6.1  |      |
| Level of Service                  |      |      |       |      | B    |      |      | B                    |      |      | A    |      |
| Approach Delay (s)                |      | 0.0  |       |      | 10.7 |      |      | 14.2                 |      |      | 6.1  |      |
| Approach LOS                      |      | A    |       |      | B    |      |      | B                    |      |      | A    |      |
| <b>Intersection Summary</b>       |      |      |       |      |      |      |      |                      |      |      |      |      |
| HCM Average Control Delay         |      |      | 10.9  |      |      |      |      | HCM Level of Service |      |      | B    |      |
| HCM Volume to Capacity ratio      |      |      | 0.52  |      |      |      |      |                      |      |      |      |      |
| Actuated Cycle Length (s)         |      |      | 90.0  |      |      |      |      | Sum of lost time (s) |      |      | 8.0  |      |
| Intersection Capacity Utilization |      |      | 61.2% |      |      |      |      | ICU Level of Service |      |      | B    |      |
| Analysis Period (min)             |      |      | 15    |      |      |      |      |                      |      |      |      |      |
| c Critical Lane Group             |      |      |       |      |      |      |      |                      |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
6484: Capitol & 28th Street

4/4/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR   | SBL  | SBT  | SBR  |
|------------------------|------|-------|------|------|------|------|------|------|-------|------|------|------|
| Lane Configurations    |      | ↕     |      | ↖    | ↗    |      |      | ↕    |       |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0   |      | 4.0  | 4.0  |      |      | 4.0  |       |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00  |      | 1.00 | 1.00 |      |      | 1.00 |       |      | 1.00 |      |
| Fr't                   |      | 0.99  |      | 1.00 | 0.98 |      |      | 0.98 |       |      | 1.00 |      |
| Flt Protected          |      | 1.00  |      | 0.95 | 1.00 |      |      | 0.98 |       |      | 0.99 |      |
| Satd. Flow (prot)      |      | 1652  |      | 1770 | 1638 |      |      | 1603 |       |      | 1646 |      |
| Flt Permitted          |      | 0.99  |      | 0.29 | 1.00 |      |      | 0.75 |       |      | 0.82 |      |
| Satd. Flow (perm)      |      | 1631  |      | 533  | 1638 |      |      | 1228 |       |      | 1367 |      |
| Volume (vph)           | 15   | 578   | 67   | 24   | 451  | 81   | 208  | 185  | 79    | 59   | 146  | 7    |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 15   | 578   | 67   | 24   | 451  | 81   | 208  | 185  | 79    | 59   | 146  | 7    |
| RTOR Reduction (vph)   | 0    | 4     | 0    | 0    | 7    | 0    | 0    | 8    | 0     | 0    | 2    | 0    |
| Lane Group Flow (vph)  | 0    | 656   | 0    | 24   | 525  | 0    | 0    | 464  | 0     | 0    | 210  | 0    |
| Parking (#/hr)         | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    |
| Turn Type              | Perm |       | Perm |      |      | Perm |      |      | Perm  |      |      |      |
| Protected Phases       |      | 4     |      |      | 8    |      |      | 2    |       |      | 6    |      |
| Permitted Phases       | 4    |       |      | 8    |      |      |      | 2    |       |      | 6    |      |
| Actuated Green, G (s)  |      | 42.0  |      |      | 42.0 |      |      | 42.0 |       |      | 42.0 |      |
| Effective Green, g (s) |      | 41.0  |      |      | 41.0 |      |      | 41.0 |       |      | 41.0 |      |
| Actuated g/C Ratio     |      | 0.46  |      |      | 0.46 |      |      | 0.46 |       |      | 0.46 |      |
| Clearance Time (s)     |      | 3.0   |      |      | 3.0  |      |      | 3.0  |       |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 743   |      |      | 243  |      |      | 746  |       |      | 623  |      |
| v/s Ratio Prot         |      |       |      |      | 0.32 |      |      |      |       |      |      |      |
| v/s Ratio Perm         |      | c0.40 |      |      | 0.05 |      |      |      | c0.38 |      |      | 0.15 |
| v/c Ratio              |      | 0.88  |      |      | 0.10 |      |      | 0.70 |       |      | 0.83 |      |
| Uniform Delay, d1      |      | 22.3  |      |      | 14.0 |      |      | 19.6 |       |      | 21.4 |      |
| Progression Factor     |      | 1.00  |      |      | 0.42 |      |      | 0.34 |       |      | 0.47 |      |
| Incremental Delay, d2  |      | 14.3  |      |      | 0.8  |      |      | 5.4  |       |      | 12.4 |      |
| Delay (s)              |      | 36.6  |      |      | 6.7  |      |      | 12.0 |       |      | 22.4 |      |
| Level of Service       |      | D     |      |      | A    |      |      | B    |       |      | C    |      |
| Approach Delay (s)     |      | 36.6  |      |      |      |      |      | 11.8 |       |      | 22.4 |      |
| Approach LOS           |      | D     |      |      | B    |      |      | C    |       |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 22.7  | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 0.86  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 94.1% | ICU Level of Service | F   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

# HCM Signalized Intersection Capacity Analysis

6485: N Street & 28th Street

4/4/2005



| Movement                  | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|---------------------------|------|-------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations       |      | ↕↕    |      |      | ↕↕   |      |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)        | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)       |      | 4.0   |      |      | 4.0  |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor         |      | 0.95  |      |      | 1.00 |      |      | 1.00 |      |      | 1.00  |      |
| Fr <sub>t</sub>           |      | 1.00  |      |      | 0.89 |      |      | 0.96 |      |      | 1.00  |      |
| Fl <sub>t</sub> Protected |      | 0.99  |      |      | 0.99 |      |      | 1.00 |      |      | 0.98  |      |
| Satd. Flow (prot)         |      | 3330  |      |      | 1475 |      |      | 1611 |      |      | 1637  |      |
| Fl <sub>t</sub> Permitted |      | 0.86  |      |      | 0.80 |      |      | 1.00 |      |      | 0.78  |      |
| Satd. Flow (perm)         |      | 2894  |      |      | 1186 |      |      | 1611 |      |      | 1303  |      |
| Volume (vph)              | 95   | 735   | 24   | 54   | 0    | 279  | 0    | 139  | 57   | 102  | 110   | 0    |
| Peak-hour factor, PHF     | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)           | 95   | 735   | 24   | 54   | 0    | 279  | 0    | 139  | 57   | 102  | 110   | 0    |
| RTOR Reduction (vph)      | 0    | 2     | 0    | 0    | 136  | 0    | 0    | 16   | 0    | 0    | 0     | 0    |
| Lane Group Flow (vph)     | 0    | 852   | 0    | 0    | 197  | 0    | 0    | 180  | 0    | 0    | 212   | 0    |
| Parking (#/hr)            | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Turn Type                 | Perm |       |      | Perm |      |      |      |      |      | Perm |       |      |
| Protected Phases          |      | 2     |      |      | 6    |      |      | 8    |      |      | 4     |      |
| Permitted Phases          | 2    |       |      | 6    |      |      |      |      |      | 4    |       |      |
| Actuated Green, G (s)     |      | 47.0  |      |      | 47.0 |      |      | 37.0 |      |      | 37.0  |      |
| Effective Green, g (s)    |      | 46.0  |      |      | 46.0 |      |      | 36.0 |      |      | 36.0  |      |
| Actuated g/C Ratio        |      | 0.51  |      |      | 0.51 |      |      | 0.40 |      |      | 0.40  |      |
| Clearance Time (s)        |      | 3.0   |      |      | 3.0  |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)        |      | 1479  |      |      | 606  |      |      | 644  |      |      | 521   |      |
| v/s Ratio Prot            |      |       |      |      |      |      |      | 0.11 |      |      |       |      |
| v/s Ratio Perm            |      | c0.29 |      |      | 0.17 |      |      |      |      |      | c0.16 |      |
| v/c Ratio                 |      | 0.58  |      |      | 0.32 |      |      | 0.28 |      |      | 0.41  |      |
| Uniform Delay, d1         |      | 15.2  |      |      | 12.9 |      |      | 18.2 |      |      | 19.3  |      |
| Progression Factor        |      | 1.00  |      |      | 2.33 |      |      | 1.00 |      |      | 1.24  |      |
| Incremental Delay, d2     |      | 1.6   |      |      | 0.8  |      |      | 1.1  |      |      | 2.1   |      |
| Delay (s)                 |      | 16.9  |      |      | 30.8 |      |      | 19.3 |      |      | 26.1  |      |
| Level of Service          |      | B     |      |      | C    |      |      | B    |      |      | C     |      |
| Approach Delay (s)        |      | 16.9  |      |      | 30.8 |      |      | 19.3 |      |      | 26.1  |      |
| Approach LOS              |      | B     |      |      | C    |      |      | B    |      |      | C     |      |

## Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 21.3  | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 0.50  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 79.6% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
6511: K Street & Alhambra

4/4/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|-------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations    |      | ↕     | ↗    |      | ↕    |      |      | ↕↗   |      |      | ↕↗    |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      | 4.0   | 4.0  |      | 4.0  |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor      |      | 1.00  | 1.00 |      | 1.00 |      |      | 0.95 |      |      | 0.95  |      |
| Frt                    |      | 1.00  | 0.85 |      | 0.99 |      |      | 0.98 |      |      | 0.94  |      |
| Flt Protected          |      | 0.98  | 1.00 |      | 0.99 |      |      | 0.99 |      |      | 1.00  |      |
| Satd. Flow (prot)      |      | 1821  | 1583 |      | 1816 |      |      | 3421 |      |      | 3342  |      |
| Flt Permitted          |      | 0.82  | 1.00 |      | 0.90 |      |      | 0.57 |      |      | 0.95  |      |
| Satd. Flow (perm)      |      | 1523  | 1583 |      | 1664 |      |      | 1983 |      |      | 3174  |      |
| Volume (vph)           | 71   | 83    | 260  | 39   | 97   | 14   | 111  | 348  | 85   | 12   | 749   | 445  |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 71   | 83    | 260  | 39   | 97   | 14   | 111  | 348  | 85   | 12   | 749   | 445  |
| RTOR Reduction (vph)   | 0    | 0     | 127  | 0    | 4    | 0    | 0    | 17   | 0    | 0    | 94    | 0    |
| Lane Group Flow (vph)  | 0    | 154   | 133  | 0    | 146  | 0    | 0    | 527  | 0    | 0    | 1112  | 0    |
| Turn Type              | Perm |       | Perm | Perm |      |      | Perm |      |      | Perm |       |      |
| Protected Phases       |      | 4     |      |      | 8    |      |      | 2    |      |      |       | 6    |
| Permitted Phases       | 4    |       | 4    | 8    |      |      | 2    |      |      | 6    |       |      |
| Actuated Green, G (s)  |      | 32.0  | 32.0 |      | 32.0 |      |      | 52.0 |      |      | 52.0  |      |
| Effective Green, g (s) |      | 31.0  | 31.0 |      | 31.0 |      |      | 51.0 |      |      | 51.0  |      |
| Actuated g/C Ratio     |      | 0.34  | 0.34 |      | 0.34 |      |      | 0.57 |      |      | 0.57  |      |
| Clearance Time (s)     |      | 3.0   | 3.0  |      | 3.0  |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)     |      | 525   | 545  |      | 573  |      |      | 1124 |      |      | 1799  |      |
| v/s Ratio Prot         |      |       |      |      |      |      |      |      |      |      |       |      |
| v/s Ratio Perm         |      | c0.10 | 0.08 |      | 0.09 |      |      | 0.27 |      |      | c0.35 |      |
| v/c Ratio              |      | 0.29  | 0.24 |      | 0.25 |      |      | 0.47 |      |      | 0.62  |      |
| Uniform Delay, d1      |      | 21.5  | 21.1 |      | 21.2 |      |      | 11.5 |      |      | 13.0  |      |
| Progression Factor     |      | 0.83  | 0.80 |      | 1.00 |      |      | 0.63 |      |      | 0.51  |      |
| Incremental Delay, d2  |      | 1.4   | 1.0  |      | 1.1  |      |      | 0.4  |      |      | 0.9   |      |
| Delay (s)              |      | 19.2  | 17.9 |      | 22.3 |      |      | 7.7  |      |      | 7.5   |      |
| Level of Service       |      | B     | B    |      | C    |      |      | A    |      |      | A     |      |
| Approach Delay (s)     |      | 18.4  |      |      | 22.3 |      |      | 7.7  |      |      | 7.5   |      |
| Approach LOS           |      | B     |      |      | C    |      |      | A    |      |      | A     |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.4  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.50  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 75.6% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

9622: K Street & 30th Street

4/4/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    | ↙    | ↑    |      |      | ↑     | ↗    |      | ↑↑↑  |      |      |      |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0  | 4.0  |      |      | 4.0   | 4.0  |      | 4.0  |      |      |      |      |
| Lane Util. Factor      | 1.00 | 1.00 |      |      | 1.00  | 1.00 |      | 0.91 |      |      |      |      |
| Fr't                   | 1.00 | 1.00 |      |      | 1.00  | 0.85 |      | 0.98 |      |      |      |      |
| Flt Protected          | 0.95 | 1.00 |      |      | 1.00  | 1.00 |      | 0.99 |      |      |      |      |
| Satd. Flow (prot)      | 1770 | 1863 |      |      | 1863  | 1583 |      | 4946 |      |      |      |      |
| Flt Permitted          | 0.30 | 1.00 |      |      | 1.00  | 1.00 |      | 0.99 |      |      |      |      |
| Satd. Flow (perm)      | 561  | 1863 |      |      | 1863  | 1583 |      | 4946 |      |      |      |      |
| Volume (vph)           | 64   | 224  | 0    | 0    | 595   | 63   | 162  | 731  | 136  | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 64   | 224  | 0    | 0    | 595   | 63   | 162  | 731  | 136  | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 0     | 21   | 0    | 23   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 64   | 224  | 0    | 0    | 595   | 42   | 0    | 1006 | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      |      | Perm |       |      | Perm |      |      |      |      |      |
| Protected Phases       |      | 4    |      |      | 8     |      |      | 2    |      |      |      |      |
| Permitted Phases       | 4    |      |      |      |       | 8    | 2    |      |      |      |      |      |
| Actuated Green, G (s)  | 51.0 | 51.0 |      |      | 51.0  | 51.0 |      | 33.0 |      |      |      |      |
| Effective Green, g (s) | 50.0 | 50.0 |      |      | 50.0  | 50.0 |      | 32.0 |      |      |      |      |
| Actuated g/C Ratio     | 0.56 | 0.56 |      |      | 0.56  | 0.56 |      | 0.36 |      |      |      |      |
| Clearance Time (s)     | 3.0  | 3.0  |      |      | 3.0   | 3.0  |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)     | 312  | 1035 |      |      | 1035  | 879  |      | 1759 |      |      |      |      |
| v/s Ratio Prot         |      | 0.12 |      |      | c0.32 |      |      |      |      |      |      |      |
| v/s Ratio Perm         | 0.11 |      |      |      |       | 0.03 |      | 0.20 |      |      |      |      |
| v/c Ratio              | 0.21 | 0.22 |      |      | 0.57  | 0.05 |      | 0.57 |      |      |      |      |
| Uniform Delay, d1      | 10.0 | 10.1 |      |      | 13.1  | 9.1  |      | 23.5 |      |      |      |      |
| Progression Factor     | 0.61 | 0.63 |      |      | 1.40  | 1.84 |      | 0.42 |      |      |      |      |
| Incremental Delay, d2  | 1.4  | 0.4  |      |      | 2.0   | 0.1  |      | 1.2  |      |      |      |      |
| Delay (s)              | 7.5  | 6.8  |      |      | 20.3  | 16.9 |      | 11.1 |      |      |      |      |
| Level of Service       | A    | A    |      |      | C     | B    |      | B    |      |      |      |      |
| Approach Delay (s)     |      | 7.0  |      |      | 20.0  |      |      | 11.1 |      |      | 0.0  |      |
| Approach LOS           |      | A    |      |      | B     |      |      | B    |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 13.5  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.57  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 66.8% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

CUMULATIVE PLUS SUTTER PROGRAM PLUS TRINITY PROJECT  
WITH SMART PLAN

AM Peak Hour

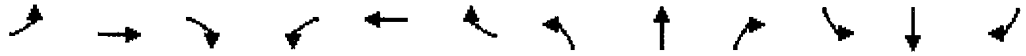
Signalized Intersections

(am9)



HCM Signalized Intersection Capacity Analysis  
 2004: L Street & 21th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      |      | ↑↑    |      |      | ↑↑↑  |      |      |      |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0   |      |      | 4.0  |      |      |      |      |
| Lane Util. Factor      |      |      |      |      | 0.95  |      |      | 0.91 |      |      |      |      |
| Frt                    |      |      |      |      | 0.96  |      |      | 1.00 |      |      |      |      |
| Flt Protected          |      |      |      |      | 1.00  |      |      | 0.99 |      |      |      |      |
| Satd. Flow (prot)      |      |      |      |      | 3223  |      |      | 4877 |      |      |      |      |
| Flt Permitted          |      |      |      |      | 1.00  |      |      | 0.99 |      |      |      |      |
| Satd. Flow (perm)      |      |      |      |      | 3223  |      |      | 4877 |      |      |      |      |
| Volume (vph)           | 0    | 0    | 0    | 0    | 683   | 260  | 273  | 1442 | 0    | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 0    | 683   | 260  | 273  | 1442 | 0    | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 7     | 0    | 0    | 55   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 936   | 0    | 0    | 1660 | 0    | 0    | 0    | 0    |
| Parking (#/hr)         | 0    | 0    |      |      | 0     | 0    | 0    | 0    | 0    |      |      |      |
| Turn Type              |      |      |      |      |       |      | Perm |      |      |      |      |      |
| Protected Phases       |      |      |      |      | 6     |      |      | 8    |      |      |      |      |
| Permitted Phases       |      |      |      |      |       |      | 8    |      |      |      |      |      |
| Actuated Green, G (s)  |      |      |      |      | 21.0  |      |      | 23.0 |      |      |      |      |
| Effective Green, g (s) |      |      |      |      | 20.0  |      |      | 22.0 |      |      |      |      |
| Actuated g/C Ratio     |      |      |      |      | 0.40  |      |      | 0.44 |      |      |      |      |
| Clearance Time (s)     |      |      |      |      | 3.0   |      |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)     |      |      |      |      | 1289  |      |      | 2146 |      |      |      |      |
| v/s Ratio Prot         |      |      |      |      | c0.29 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      |      |      |       |      |      | 0.34 |      |      |      |      |
| v/c Ratio              |      |      |      |      | 0.73  |      |      | 0.77 |      |      |      |      |
| Uniform Delay, d1      |      |      |      |      | 12.7  |      |      | 11.9 |      |      |      |      |
| Progression Factor     |      |      |      |      | 0.34  |      |      | 1.00 |      |      |      |      |
| Incremental Delay, d2  |      |      |      |      | 3.0   |      |      | 2.8  |      |      |      |      |
| Delay (s)              |      |      |      |      | 7.3   |      |      | 14.7 |      |      |      |      |
| Level of Service       |      |      |      |      | A     |      |      | B    |      |      |      |      |
| Approach Delay (s)     |      | 0.0  |      |      | 7.3   |      |      | 14.7 |      |      | 0.0  |      |
| Approach LOS           |      | A    |      |      | A     |      |      | B    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 12.0  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.75  |                      |     |
| Actuated Cycle Length (s)         | 50.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 67.3% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 2012: J Street & 21th Street

6/1/2005



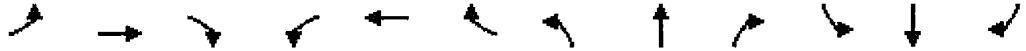
| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|---------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations       |      | ↑↑↑  |      |      |      |      |      | ↑↑↑   |      |      |      |      |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |      | 4.0  |      |      |      |      |      | 4.0   |      |      |      |      |
| Lane Util. Factor         |      | 0.91 |      |      |      |      |      | 0.91  |      |      |      |      |
| Fr <sub>t</sub>           |      | 1.00 |      |      |      |      |      | 0.97  |      |      |      |      |
| Fl <sub>t</sub> Protected |      | 1.00 |      |      |      |      |      | 1.00  |      |      |      |      |
| Satd. Flow (prot)         |      | 4914 |      |      |      |      |      | 4787  |      |      |      |      |
| Fl <sub>t</sub> Permitted |      | 1.00 |      |      |      |      |      | 1.00  |      |      |      |      |
| Satd. Flow (perm)         |      | 4914 |      |      |      |      |      | 4787  |      |      |      |      |
| Volume (vph)              | 7    | 1024 | 0    | 0    | 0    | 0    | 0    | 1310  | 278  | 0    | 0    | 0    |
| Peak-hour factor, PHF     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 7    | 1024 | 0    | 0    | 0    | 0    | 0    | 1310  | 278  | 0    | 0    | 0    |
| RTOR Reduction (vph)      | 0    | 1    | 0    | 0    | 0    | 0    | 0    | 9     | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)     | 0    | 1030 | 0    | 0    | 0    | 0    | 0    | 1579  | 0    | 0    | 0    | 0    |
| Parking (#/hr)            | 0    | 0    |      |      |      |      |      | 0     | 0    |      |      |      |
| Turn Type                 | Perm |      |      |      |      |      |      |       |      |      |      |      |
| Protected Phases          |      | 2    |      |      |      |      |      | 8     |      |      |      |      |
| Permitted Phases          | 2    |      |      |      |      |      |      |       |      |      |      |      |
| Actuated Green, G (s)     |      | 18.0 |      |      |      |      |      | 26.0  |      |      |      |      |
| Effective Green, g (s)    |      | 17.0 |      |      |      |      |      | 25.0  |      |      |      |      |
| Actuated g/C Ratio        |      | 0.34 |      |      |      |      |      | 0.50  |      |      |      |      |
| Clearance Time (s)        |      | 3.0  |      |      |      |      |      | 3.0   |      |      |      |      |
| Lane Grp Cap (vph)        |      | 1671 |      |      |      |      |      | 2394  |      |      |      |      |
| v/s Ratio Prot            |      |      |      |      |      |      |      | c0.33 |      |      |      |      |
| v/s Ratio Perm            |      | 0.21 |      |      |      |      |      |       |      |      |      |      |
| v/c Ratio                 |      | 0.62 |      |      |      |      |      | 0.66  |      |      |      |      |
| Uniform Delay, d1         |      | 13.8 |      |      |      |      |      | 9.3   |      |      |      |      |
| Progression Factor        |      | 0.53 |      |      |      |      |      | 0.26  |      |      |      |      |
| Incremental Delay, d2     |      | 1.4  |      |      |      |      |      | 0.9   |      |      |      |      |
| Delay (s)                 |      | 8.7  |      |      |      |      |      | 3.3   |      |      |      |      |
| Level of Service          |      | A    |      |      |      |      |      | A     |      |      |      |      |
| Approach Delay (s)        |      | 8.7  |      |      | 0.0  |      |      | 3.3   |      |      | 0.0  |      |
| Approach LOS              |      | A    |      |      | A    |      |      | A     |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 5.4   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.64  |                      |     |
| Actuated Cycle Length (s)         | 50.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 58.1% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis

2074: J Street & 19th Street

6/1/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR                  |     |
|-----------------------------------|------|------|-------|------|------|------|------|------|------|------|------|----------------------|-----|
| Lane Configurations               |      | ↑↑↑  |       |      |      |      |      |      |      |      | ↑↑↑  |                      |     |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900                 |     |
| Total Lost time (s)               |      | 4.0  |       |      |      |      |      |      |      |      | 4.0  |                      |     |
| Lane Util. Factor                 |      | 0.91 |       |      |      |      |      |      |      |      | 0.91 |                      |     |
| Frt                               |      | 0.96 |       |      |      |      |      |      |      |      | 1.00 |                      |     |
| Flt Protected                     |      | 1.00 |       |      |      |      |      |      |      |      | 0.99 |                      |     |
| Satd. Flow (prot)                 |      | 4727 |       |      |      |      |      |      |      |      | 4850 |                      |     |
| Flt Permitted                     |      | 1.00 |       |      |      |      |      |      |      |      | 0.99 |                      |     |
| Satd. Flow (perm)                 |      | 4727 |       |      |      |      |      |      |      |      | 4850 |                      |     |
| Volume (vph)                      | 0    | 1014 | 348   | 0    | 0    | 0    | 0    | 0    | 0    | 107  | 285  | 0                    |     |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00                 |     |
| Adj. Flow (vph)                   | 0    | 1014 | 348   | 0    | 0    | 0    | 0    | 0    | 0    | 107  | 285  | 0                    |     |
| RTOR Reduction (vph)              | 0    | 124  | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 35   | 0                    |     |
| Lane Group Flow (vph)             | 0    | 1238 | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 357  | 0                    |     |
| Parking (#/hr)                    |      | 0    | 0     |      |      |      |      |      |      | 0    | 0    |                      |     |
| Turn Type                         |      |      |       |      |      |      |      |      |      | Perm |      |                      |     |
| Protected Phases                  |      | 2    |       |      |      |      |      |      |      |      | 4    |                      |     |
| Permitted Phases                  |      |      |       |      |      |      |      |      |      | 4    |      |                      |     |
| Actuated Green, G (s)             |      | 24.0 |       |      |      |      |      |      |      |      | 20.0 |                      |     |
| Effective Green, g (s)            |      | 23.0 |       |      |      |      |      |      |      |      | 19.0 |                      |     |
| Actuated g/C Ratio                |      | 0.46 |       |      |      |      |      |      |      |      | 0.38 |                      |     |
| Clearance Time (s)                |      | 3.0  |       |      |      |      |      |      |      |      | 3.0  |                      |     |
| Lane Grp Cap (vph)                |      | 2174 |       |      |      |      |      |      |      |      | 1843 |                      |     |
| v/s Ratio Prot                    |      | 0.26 |       |      |      |      |      |      |      |      |      |                      |     |
| v/s Ratio Perm                    |      |      |       |      |      |      |      |      |      |      | 0.07 |                      |     |
| v/c Ratio                         |      | 0.57 |       |      |      |      |      |      |      |      | 0.19 |                      |     |
| Uniform Delay, d1                 |      | 9.9  |       |      |      |      |      |      |      |      | 10.4 |                      |     |
| Progression Factor                |      | 1.00 |       |      |      |      |      |      |      |      | 1.00 |                      |     |
| Incremental Delay, d2             |      | 1.1  |       |      |      |      |      |      |      |      | 0.2  |                      |     |
| Delay (s)                         |      | 11.0 |       |      |      |      |      |      |      |      | 10.6 |                      |     |
| Level of Service                  |      | B    |       |      |      |      |      |      |      |      | B    |                      |     |
| Approach Delay (s)                |      | 11.0 |       |      | 0.0  |      |      | 0.0  |      |      | 10.6 |                      |     |
| Approach LOS                      |      | B    |       |      | A    |      |      | A    |      |      | B    |                      |     |
| <b>Intersection Summary</b>       |      |      |       |      |      |      |      |      |      |      |      |                      |     |
| HCM Average Control Delay         |      |      | 10.9  |      |      |      |      |      |      |      |      | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      |      |      | 0.40  |      |      |      |      |      |      |      |      |                      |     |
| Actuated Cycle Length (s)         |      |      | 50.0  |      |      |      |      |      |      |      |      | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization |      |      | 41.7% |      |      |      |      |      |      |      |      | ICU Level of Service | A   |
| Analysis Period (min)             |      |      | 15    |      |      |      |      |      |      |      |      |                      |     |
| c Critical Lane Group             |      |      |       |      |      |      |      |      |      |      |      |                      |     |

HCM Signalized Intersection Capacity Analysis  
 2088: L Street & 29th Street

6/1/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT   | WBR                  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|-----------------------------------|------|------|-------|------|-------|----------------------|------|------|------|------|-------|------|
| Lane Configurations               |      |      |       | ↘    | ↗     |                      |      |      |      |      | ↗     | ↘    |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900  | 1900                 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)               |      |      |       | 4.0  | 4.0   |                      |      |      |      |      | 4.0   | 4.0  |
| Lane Util. Factor                 |      |      |       | 1.00 | 0.95  |                      |      |      |      |      | 0.86  | 0.86 |
| Frt                               |      |      |       | 1.00 | 1.00  |                      |      |      |      |      | 1.00  | 0.85 |
| Flt Protected                     |      |      |       | 0.95 | 1.00  |                      |      |      |      |      | 1.00  | 1.00 |
| Satd. Flow (prot)                 |      |      |       | 1770 | 3539  |                      |      |      |      |      | 4646  | 1226 |
| Flt Permitted                     |      |      |       | 0.95 | 1.00  |                      |      |      |      |      | 1.00  | 1.00 |
| Satd. Flow (perm)                 |      |      |       | 1770 | 3539  |                      |      |      |      |      | 4646  | 1226 |
| Volume (vph)                      | 0    | 0    | 0     | 156  | 583   | 0                    | 0    | 0    | 0    | 0    | 1026  | 234  |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 156  | 583   | 0                    | 0    | 0    | 0    | 0    | 1026  | 234  |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 35   | 0     | 0                    | 0    | 0    | 0    | 0    | 0     | 98   |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 121  | 583   | 0                    | 0    | 0    | 0    | 0    | 1026  | 136  |
| Parking (#/hr)                    |      |      | 0     |      |       |                      |      |      |      |      | 0     | 0    |
| Turn Type                         |      |      |       | Perm |       |                      |      |      |      |      |       | Perm |
| Protected Phases                  |      |      |       |      | 6     |                      |      |      |      |      |       | 4    |
| Permitted Phases                  |      |      |       | 6    |       |                      |      |      |      |      |       | 4    |
| Actuated Green, G (s)             |      |      |       | 40.0 | 40.0  |                      |      |      |      |      | 44.0  | 44.0 |
| Effective Green, g (s)            |      |      |       | 39.0 | 39.0  |                      |      |      |      |      | 43.0  | 43.0 |
| Actuated g/C Ratio                |      |      |       | 0.43 | 0.43  |                      |      |      |      |      | 0.48  | 0.48 |
| Clearance Time (s)                |      |      |       | 3.0  | 3.0   |                      |      |      |      |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)                |      |      |       | 767  | 1534  |                      |      |      |      |      | 2220  | 586  |
| v/s Ratio Prot                    |      |      |       |      | c0.16 |                      |      |      |      |      | c0.22 |      |
| v/s Ratio Perm                    |      |      |       | 0.07 |       |                      |      |      |      |      |       | 0.11 |
| v/c Ratio                         |      |      |       | 0.16 | 0.38  |                      |      |      |      |      | 0.46  | 0.23 |
| Uniform Delay, d1                 |      |      |       | 15.5 | 17.3  |                      |      |      |      |      | 15.7  | 13.8 |
| Progression Factor                |      |      |       | 0.51 | 0.62  |                      |      |      |      |      | 0.80  | 0.05 |
| Incremental Delay, d2             |      |      |       | 0.4  | 0.7   |                      |      |      |      |      | 0.6   | 0.8  |
| Delay (s)                         |      |      |       | 8.3  | 11.4  |                      |      |      |      |      | 13.2  | 1.4  |
| Level of Service                  |      |      |       | A    | B     |                      |      |      |      |      | B     | A    |
| Approach Delay (s)                |      | 0.0  |       |      | 10.7  |                      |      | 0.0  |      |      | 11.0  |      |
| Approach LOS                      |      | A    |       |      | B     |                      |      | A    |      |      | B     |      |
| <b>Intersection Summary</b>       |      |      |       |      |       |                      |      |      |      |      |       |      |
| HCM Average Control Delay         |      |      | 10.9  |      |       | HCM Level of Service |      |      |      |      | B     |      |
| HCM Volume to Capacity ratio      |      |      | 0.42  |      |       |                      |      |      |      |      |       |      |
| Actuated Cycle Length (s)         |      |      | 90.0  |      |       | Sum of lost time (s) |      |      |      | 8.0  |       |      |
| Intersection Capacity Utilization |      |      | 44.3% |      |       | ICU Level of Service |      |      |      | A    |       |      |
| Analysis Period (min)             |      |      | 15    |      |       |                      |      |      |      |      |       |      |
| c Critical Lane Group             |      |      |       |      |       |                      |      |      |      |      |       |      |



# HCM Signalized Intersection Capacity Analysis

2239: L Street & Alhambra

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      |      | ↕    |      |      | ↕    |      |      | ↕    | ↕    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      |      | 4.0  |      |      | 4.0  | 4.0  |
| Lane Util. Factor      |      |      |      |      | 1.00 |      |      | 1.00 |      |      | 1.00 | 1.00 |
| Flt                    |      |      |      |      | 0.99 |      |      | 0.96 |      |      | 1.00 | 0.85 |
| Flt Protected          |      |      |      |      | 1.00 |      |      | 0.99 |      |      | 0.99 | 1.00 |
| Satd. Flow (prot)      |      |      |      |      | 1647 |      |      | 1595 |      |      | 1851 | 1425 |
| Flt Permitted          |      |      |      |      | 1.00 |      |      | 0.80 |      |      | 0.84 | 1.00 |
| Satd. Flow (perm)      |      |      |      |      | 1647 |      |      | 1289 |      |      | 1563 | 1425 |
| Volume (vph)           | 0    | 0    | 0    | 13   | 132  | 16   | 145  | 417  | 235  | 71   | 482  | 354  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 13   | 132  | 16   | 145  | 417  | 235  | 71   | 482  | 354  |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 4    | 0    | 0    | 17   | 0    | 0    | 0    | 94   |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 157  | 0    | 0    | 780  | 0    | 0    | 553  | 260  |
| Parking (#/hr)         |      |      |      | 0    | 0    | 0    | 0    | 0    | 0    |      |      | 0    |
| Turn Type              |      |      |      |      | Perm |      |      | Perm |      |      | Perm | Perm |
| Protected Phases       |      |      |      |      | 6    |      |      | 8    |      |      | 4    | 4    |
| Permitted Phases       |      |      |      |      | 6    |      |      | 8    |      |      | 4    | 4    |
| Actuated Green, G (s)  |      |      |      |      | 17.0 |      |      | 67.0 |      |      | 67.0 | 67.0 |
| Effective Green, g (s) |      |      |      |      | 16.0 |      |      | 66.0 |      |      | 66.0 | 66.0 |
| Actuated g/C Ratio     |      |      |      |      | 0.18 |      |      | 0.73 |      |      | 0.73 | 0.73 |
| Clearance Time (s)     |      |      |      |      | 3.0  |      |      | 3.0  |      |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |      |      |      |      | 293  |      |      | 945  |      |      | 1146 | 1045 |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      |      |      | 0.10 |      |      | 0.61 |      |      | 0.35 | 0.18 |
| v/c Ratio              |      |      |      |      | 0.54 |      |      | 0.83 |      |      | 0.48 | 0.25 |
| Uniform Delay, d1      |      |      |      |      | 33.6 |      |      | 8.1  |      |      | 5.0  | 3.9  |
| Progression Factor     |      |      |      |      | 1.00 |      |      | 0.60 |      |      | 1.61 | 5.73 |
| Incremental Delay, d2  |      |      |      |      | 6.9  |      |      | 4.0  |      |      | 1.3  | 0.5  |
| Delay (s)              |      |      |      |      | 40.5 |      |      | 8.9  |      |      | 9.3  | 22.9 |
| Level of Service       |      |      |      |      | D    |      |      | A    |      |      | A    | C    |
| Approach Delay (s)     |      | 0.0  |      |      | 40.5 |      |      | 8.9  |      |      | 14.6 |      |
| Approach LOS           |      | A    |      |      | D    |      |      | A    |      |      | B    |      |

## Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 14.4  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.77  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 92.2% | ICU Level of Service | F   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3426: L Street & 19th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations    |      |      |      |      | ↑↑   |      |      |      |      |      | ↑↑↑   |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      |      |      |      |      | 4.0   |      |
| Lane Util. Factor      |      |      |      |      | 0.95 |      |      |      |      |      | 0.91  |      |
| Frt                    |      |      |      |      | 1.00 |      |      |      |      |      | 0.99  |      |
| Flt Protected          |      |      |      |      | 1.00 |      |      |      |      |      | 1.00  |      |
| Satd. Flow (prot)      |      |      |      |      | 3349 |      |      |      |      |      | 4872  |      |
| Flt Permitted          |      |      |      |      | 1.00 |      |      |      |      |      | 1.00  |      |
| Satd. Flow (perm)      |      |      |      |      | 3349 |      |      |      |      |      | 4872  |      |
| Volume (vph)           | 0    | 0    | 0    | 72   | 868  | 0    | 0    | 0    | 0    | 0    | 595   | 38   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 72   | 868  | 0    | 0    | 0    | 0    | 0    | 595   | 38   |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 12   | 0    | 0    | 0    | 0    | 0    | 14    | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 928  | 0    | 0    | 0    | 0    | 0    | 619   | 0    |
| Parking (#/hr)         |      | 0    | 0    | 0    | 0    |      |      |      |      | 0    | 0     | 0    |
| Turn Type              |      |      |      |      | Perm |      |      |      |      |      |       |      |
| Protected Phases       |      |      |      |      | 6    |      |      |      |      |      | 4     |      |
| Permitted Phases       |      |      |      |      | 6    |      |      |      |      |      |       |      |
| Actuated Green, G (s)  |      |      |      |      | 25.0 |      |      |      |      |      | 19.0  |      |
| Effective Green, g (s) |      |      |      |      | 24.0 |      |      |      |      |      | 18.0  |      |
| Actuated g/C Ratio     |      |      |      |      | 0.48 |      |      |      |      |      | 0.36  |      |
| Clearance Time (s)     |      |      |      |      | 3.0  |      |      |      |      |      | 3.0   |      |
| Lane Grp Cap (vph)     |      |      |      |      | 1608 |      |      |      |      |      | 1754  |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      | c0.13 |      |
| v/s Ratio Perm         |      |      |      |      | 0.28 |      |      |      |      |      |       |      |
| v/c Ratio              |      |      |      |      | 0.58 |      |      |      |      |      | 0.35  |      |
| Uniform Delay, d1      |      |      |      |      | 9.3  |      |      |      |      |      | 11.7  |      |
| Progression Factor     |      |      |      |      | 0.44 |      |      |      |      |      | 0.84  |      |
| Incremental Delay, d2  |      |      |      |      | 1.0  |      |      |      |      |      | 0.5   |      |
| Delay (s)              |      |      |      |      | 5.1  |      |      |      |      |      | 10.3  |      |
| Level of Service       |      |      |      |      | A    |      |      |      |      |      | B     |      |
| Approach Delay (s)     |      | 0.0  |      |      | 5.1  |      |      | 0.0  |      |      | 10.3  |      |
| Approach LOS           |      | A    |      |      | A    |      |      | A    |      |      | B     |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 7.2   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.48  |                      |     |
| Actuated Cycle Length (s)         | 50.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 45.1% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

# HCM Signalized Intersection Capacity Analysis

3427: L Street & 26th St

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations    |      |      |      |      | ↕↕   |      |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor      |      |      |      |      | 0.95 |      |      | 1.00 |      |      | 1.00  |      |
| Flt                    |      |      |      |      | 0.99 |      |      | 1.00 |      |      | 0.95  |      |
| Flt Protected          |      |      |      |      | 1.00 |      |      | 0.98 |      |      | 1.00  |      |
| Satd. Flow (prot)      |      |      |      |      | 3339 |      |      | 1646 |      |      | 1593  |      |
| Flt Permitted          |      |      |      |      | 1.00 |      |      | 0.92 |      |      | 1.00  |      |
| Satd. Flow (perm)      |      |      |      |      | 3339 |      |      | 1543 |      |      | 1593  |      |
| Volume (vph)           | 0    | 0    | 0    | 14   | 922  | 40   | 21   | 36   | 0    | 0    | 51    | 30   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 14   | 922  | 40   | 21   | 36   | 0    | 0    | 51    | 30   |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 6    | 0    | 0    | 0    | 0    | 0    | 19    | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 970  | 0    | 0    | 57   | 0    | 0    | 62    | 0    |
| Parking (#/hr)         |      |      |      | 0    | 0    | 0    | 0    | 0    |      |      | 0     | 0    |
| Turn Type              |      |      |      |      | Perm |      |      | Perm |      |      |       |      |
| Protected Phases       |      |      |      |      |      | 8    |      | 2    |      |      | 6     |      |
| Permitted Phases       |      |      |      |      | 8    |      | 2    |      |      |      |       |      |
| Actuated Green, G (s)  |      |      |      |      | 25.0 |      |      | 19.0 |      |      | 19.0  |      |
| Effective Green, g (s) |      |      |      |      | 24.0 |      |      | 18.0 |      |      | 18.0  |      |
| Actuated g/C Ratio     |      |      |      |      | 0.48 |      |      | 0.36 |      |      | 0.36  |      |
| Clearance Time (s)     |      |      |      |      | 3.0  |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)     |      |      |      |      | 1603 |      |      | 555  |      |      | 573   |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      | c0.04 |      |
| v/s Ratio Perm         |      |      |      |      | 0.29 |      |      | 0.04 |      |      |       |      |
| v/c Ratio              |      |      |      |      | 0.60 |      |      | 0.10 |      |      | 0.11  |      |
| Uniform Delay, d1      |      |      |      |      | 9.5  |      |      | 10.6 |      |      | 10.7  |      |
| Progression Factor     |      |      |      |      | 1.00 |      |      | 0.68 |      |      | 1.00  |      |
| Incremental Delay, d2  |      |      |      |      | 1.7  |      |      | 0.4  |      |      | 0.4   |      |
| Delay (s)              |      |      |      |      | 11.2 |      |      | 7.6  |      |      | 11.0  |      |
| Level of Service       |      |      |      |      | B    |      |      | A    |      |      | B     |      |
| Approach Delay (s)     |      | 0.0  |      |      | 11.2 |      |      | 7.6  |      |      | 11.0  |      |
| Approach LOS           |      | A    |      |      | B    |      |      | A    |      |      | B     |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.0  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.39  |                      |     |
| Actuated Cycle Length (s)         | 50.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 43.6% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3428: J Street & 29th St off ramp

6/1/2005



| Movement                          | EBT   | EBR  | SBL   | SBT   | SWL2 | SWL  |
|-----------------------------------|-------|------|-------|-------|------|------|
| Lane Configurations               | ↑↑↑   |      |       | ↑↑↑   |      | ↘↘   |
| Ideal Flow (vphpl)                | 1900  | 1900 | 1900  | 1900  | 1900 | 1900 |
| Total Lost time (s)               | 4.0   |      |       | 4.0   |      | 4.0  |
| Lane Util. Factor                 | 0.91  |      |       | 0.91  |      | 0.97 |
| Fr <sub>t</sub>                   | 0.96  |      |       | 1.00  |      | 1.00 |
| Fl <sub>t</sub> Protected         | 1.00  |      |       | 1.00  |      | 0.95 |
| Satd. Flow (prot)                 | 4730  |      |       | 4891  |      | 3433 |
| Fl <sub>t</sub> Permitted         | 1.00  |      |       | 1.00  |      | 0.95 |
| Satd. Flow (perm)                 | 4730  |      |       | 4891  |      | 3433 |
| Volume (vph)                      | 925   | 311  | 34    | 305   | 420  | 666  |
| Peak-hour factor, PHF             | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 925   | 311  | 34    | 305   | 420  | 666  |
| RTOR Reduction (vph)              | 67    | 0    | 0     | 0     | 0    | 120  |
| Lane Group Flow (vph)             | 1169  | 0    | 0     | 339   | 0    | 966  |
| Parking (#/hr)                    | 0     | 0    |       | 0     |      |      |
| Turn Type                         |       |      | Split |       | Perm |      |
| Protected Phases                  | 2     |      | 8     | 8     |      | 4    |
| Permitted Phases                  |       |      |       |       | 4    |      |
| Actuated Green, G (s)             | 30.0  |      |       | 17.0  |      | 34.0 |
| Effective Green, g (s)            | 29.0  |      |       | 16.0  |      | 33.0 |
| Actuated g/C Ratio                | 0.32  |      |       | 0.18  |      | 0.37 |
| Clearance Time (s)                | 3.0   |      |       | 3.0   |      | 3.0  |
| Lane Grp Cap (vph)                | 1524  |      |       | 870   |      | 1259 |
| v/s Ratio Prot                    | c0.25 |      |       | c0.07 |      |      |
| v/s Ratio Perm                    |       |      |       |       |      | 0.28 |
| v/c Ratio                         | 0.77  |      |       | 0.39  |      | 0.77 |
| Uniform Delay, d <sub>1</sub>     | 27.5  |      |       | 32.7  |      | 25.1 |
| Progression Factor                | 0.55  |      |       | 1.00  |      | 1.00 |
| Incremental Delay, d <sub>2</sub> | 3.4   |      |       | 1.3   |      | 4.5  |
| Delay (s)                         | 18.4  |      |       | 34.0  |      | 29.6 |
| Level of Service                  | B     |      |       | C     |      | C    |
| Approach Delay (s)                | 18.4  |      |       | 34.0  |      | 29.6 |
| Approach LOS                      | B     |      |       | C     |      | C    |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 25.0  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.69  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 72.4% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

# HCM Signalized Intersection Capacity Analysis

3429: J Street & Alhambra

6/1/2005



| Movement               | EBL   | EBT   | EBR  | WBL   | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|-------|-------|------|-------|------|------|------|------|------|------|-------|------|
| Lane Configurations    | ↖     | ↕     |      | ↖     | ↕    | ↗    |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0   | 4.0   |      | 4.0   | 4.0  | 4.0  |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor      | 1.00  | 0.95  |      | 0.95  | 0.95 | 1.00 |      | 0.95 |      |      | 0.95  |      |
| Frt                    | 1.00  | 0.97  |      | 1.00  | 1.00 | 0.85 |      | 0.95 |      |      | 1.00  |      |
| Flt Protected          | 0.95  | 1.00  |      | 0.95  | 0.95 | 1.00 |      | 1.00 |      |      | 1.00  |      |
| Satd. Flow (prot)      | 1770  | 3264  |      | 1681  | 1681 | 1425 |      | 3200 |      |      | 3358  |      |
| Flt Permitted          | 0.95  | 1.00  |      | 0.95  | 0.95 | 1.00 |      | 1.00 |      |      | 0.94  |      |
| Satd. Flow (perm)      | 1770  | 3264  |      | 1681  | 1681 | 1425 |      | 3200 |      |      | 3175  |      |
| Volume (vph)           | 153   | 939   | 228  | 604   | 0    | 192  | 0    | 248  | 118  | 8    | 322   | 0    |
| Peak-hour factor, PHF  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 153   | 939   | 228  | 604   | 0    | 192  | 0    | 248  | 118  | 8    | 322   | 0    |
| RTOR Reduction (vph)   | 0     | 24    | 0    | 0     | 0    | 143  | 0    | 63   | 0    | 0    | 0     | 0    |
| Lane Group Flow (vph)  | 153   | 1143  | 0    | 302   | 302  | 49   | 0    | 303  | 0    | 0    | 330   | 0    |
| Parking (#/hr)         |       | 0     | 0    |       |      | 0    |      | 0    | 0    |      | 0     |      |
| Turn Type              | Split |       |      | Split |      | Perm |      |      | Perm |      |       |      |
| Protected Phases       | 2     | 2     |      | 6     | 6    |      |      | 8    |      |      | 4     |      |
| Permitted Phases       |       |       |      |       |      | 6    |      |      |      | 4    |       |      |
| Actuated Green, G (s)  | 40.0  | 40.0  |      | 24.0  | 24.0 | 24.0 |      | 17.0 |      |      | 17.0  |      |
| Effective Green, g (s) | 39.0  | 39.0  |      | 23.0  | 23.0 | 23.0 |      | 16.0 |      |      | 16.0  |      |
| Actuated g/C Ratio     | 0.43  | 0.43  |      | 0.26  | 0.26 | 0.26 |      | 0.18 |      |      | 0.18  |      |
| Clearance Time (s)     | 3.0   | 3.0   |      | 3.0   | 3.0  | 3.0  |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)     | 767   | 1414  |      | 430   | 430  | 364  |      | 569  |      |      | 564   |      |
| v/s Ratio Prot         | 0.09  | c0.35 |      | c0.18 | 0.18 |      |      | 0.09 |      |      |       |      |
| v/s Ratio Perm         |       |       |      |       |      | 0.03 |      |      |      |      | c0.10 |      |
| v/c Ratio              | 0.20  | 0.81  |      | 0.70  | 0.70 | 0.13 |      | 0.53 |      |      | 0.59  |      |
| Uniform Delay, d1      | 15.8  | 22.2  |      | 30.4  | 30.4 | 25.8 |      | 33.6 |      |      | 34.0  |      |
| Progression Factor     | 0.68  | 0.54  |      | 1.00  | 1.00 | 1.00 |      | 0.49 |      |      | 1.00  |      |
| Incremental Delay, d2  | 0.6   | 5.0   |      | 9.2   | 9.2  | 0.8  |      | 3.3  |      |      | 4.4   |      |
| Delay (s)              | 11.3  | 17.0  |      | 39.6  | 39.6 | 26.6 |      | 19.9 |      |      | 38.4  |      |
| Level of Service       | B     | B     |      | D     | D    | C    |      | B    |      |      | D     |      |
| Approach Delay (s)     |       | 16.3  |      |       | 36.5 |      |      | 19.9 |      |      | 38.4  |      |
| Approach LOS           |       | B     |      |       | D    |      |      | B    |      |      | D     |      |

## Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 25.1  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.73  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 74.6% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3435: N Street & 29th Street

6/1/2005



| Movement               | EBT  | EBR   | EBR2 | WBL2  | WBL   | WBT   | SBL2 | SBL   | SBT  | SBR  |
|------------------------|------|-------|------|-------|-------|-------|------|-------|------|------|
| Lane Configurations    | ↑    | ↗     |      |       | ↖     | ↖     |      | ↗     | ↑    |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900  | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    | 4.0  | 4.0   |      |       | 4.0   | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor      | 1.00 | 1.00  |      |       | 0.95  | 0.95  |      | 0.97  | 0.95 |      |
| Fr't                   | 1.00 | 0.85  |      |       | 1.00  | 1.00  |      | 1.00  | 1.00 |      |
| Flt Protected          | 1.00 | 1.00  |      |       | 0.95  | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)      | 1676 | 1425  |      |       | 1681  | 1770  |      | 3433  | 3356 |      |
| Flt Permitted          | 1.00 | 1.00  |      |       | 0.95  | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)      | 1676 | 1425  |      |       | 1681  | 1770  |      | 3433  | 3356 |      |
| Volume (vph)           | 252  | 224   | 39   | 150   | 110   | 454   | 97   | 752   | 322  | 4    |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 252  | 224   | 39   | 150   | 110   | 454   | 97   | 752   | 322  | 4    |
| RTOR Reduction (vph)   | 0    | 7     | 0    | 0     | 0     | 0     | 0    | 0     | 1    | 0    |
| Lane Group Flow (vph)  | 252  | 256   | 0    | 0     | 260   | 454   | 0    | 849   | 325  | 0    |
| Parking (#/hr)         | 0    | 0     | 0    |       |       |       |      |       | 0    |      |
| Turn Type              |      | Perm  |      | Split | Split |       | Perm | Perm  |      |      |
| Protected Phases       | 4    |       |      | 8     | 8     | 8     |      |       | 6    |      |
| Permitted Phases       |      | 4     |      |       |       |       | 6    | 6     |      |      |
| Actuated Green, G (s)  | 22.0 | 22.0  |      |       | 30.0  | 30.0  |      | 29.0  | 29.0 |      |
| Effective Green, g (s) | 21.0 | 21.0  |      |       | 29.0  | 29.0  |      | 28.0  | 28.0 |      |
| Actuated g/C Ratio     | 0.23 | 0.23  |      |       | 0.32  | 0.32  |      | 0.31  | 0.31 |      |
| Clearance Time (s)     | 3.0  | 3.0   |      |       | 3.0   | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     | 391  | 333   |      |       | 542   | 570   |      | 1068  | 1044 |      |
| v/s Ratio Prot         | 0.15 |       |      |       | 0.15  | c0.26 |      |       | 0.10 |      |
| v/s Ratio Perm         |      | c0.18 |      |       |       |       |      | c0.25 |      |      |
| v/c Ratio              | 0.64 | 0.77  |      |       | 0.48  | 0.80  |      | 0.79  | 0.31 |      |
| Uniform Delay, d1      | 31.1 | 32.2  |      |       | 24.5  | 27.8  |      | 28.4  | 23.6 |      |
| Progression Factor     | 0.79 | 0.77  |      |       | 0.72  | 0.70  |      | 0.70  | 0.68 |      |
| Incremental Delay, d2  | 7.8  | 15.3  |      |       | 1.8   | 6.7   |      | 5.5   | 0.7  |      |
| Delay (s)              | 32.3 | 40.1  |      |       | 19.4  | 26.3  |      | 25.2  | 16.7 |      |
| Level of Service       | C    | D     |      |       | B     | C     |      | C     | B    |      |
| Approach Delay (s)     | 36.3 |       |      |       |       | 23.8  |      |       | 22.9 |      |
| Approach LOS           | D    |       |      |       |       | C     |      |       | C    |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 26.0  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.79  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 74.4% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3436: Capitol & Alhambra

6/1/2005



| Movement                  | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|---------------------------|-------|-------|------|-------|-------|------|------|-------|------|------|------|------|
| Lane Configurations       |       | ↔     |      |       | ↔     |      | ↖    | ↗     | ↗    | ↖    | ↗    | ↖    |
| Ideal Flow (vphpl)        | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |       | 4.0   |      |       | 4.0   |      | 4.0  | 4.0   | 4.0  | 4.0  | 4.0  | 4.0  |
| Lane Util. Factor         |       | 0.95  |      |       | 0.95  |      | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Fr <sub>t</sub>           |       | 0.98  |      |       | 0.97  |      | 1.00 | 1.00  | 0.85 | 1.00 | 1.00 | 0.85 |
| Fl <sub>t</sub> Protected |       | 0.99  |      |       | 1.00  |      | 0.95 | 1.00  | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot)         |       | 3271  |      |       | 3257  |      | 1593 | 1676  | 1425 | 1593 | 1676 | 1425 |
| Fl <sub>t</sub> Permitted |       | 0.99  |      |       | 1.00  |      | 0.36 | 1.00  | 1.00 | 0.18 | 1.00 | 1.00 |
| Satd. Flow (perm)         |       | 3271  |      |       | 3257  |      | 602  | 1676  | 1425 | 306  | 1676 | 1425 |
| Volume (vph)              | 88    | 302   | 51   | 29    | 733   | 188  | 51   | 561   | 103  | 88   | 392  | 51   |
| Peak-hour factor, PHF     | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 88    | 302   | 51   | 29    | 733   | 188  | 51   | 561   | 103  | 88   | 392  | 51   |
| RTOR Reduction (vph)      | 0     | 12    | 0    | 0     | 24    | 0    | 0    | 0     | 37   | 0    | 0    | 26   |
| Lane Group Flow (vph)     | 0     | 429   | 0    | 0     | 926   | 0    | 51   | 561   | 66   | 88   | 392  | 25   |
| Parking (#/hr)            | 0     | 0     | 0    | 0     | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type                 | Split |       |      | Split |       |      | Perm |       | Perm | Perm |      | Perm |
| Protected Phases          | 4     | 4     |      | 8     | 8     |      |      | 2     |      |      |      | 6    |
| Permitted Phases          |       |       |      |       |       |      | 2    |       | 2    | 6    |      | 6    |
| Actuated Green, G (s)     |       | 17.0  |      |       | 28.0  |      | 36.0 | 36.0  | 36.0 | 36.0 | 36.0 | 36.0 |
| Effective Green, g (s)    |       | 16.0  |      |       | 27.0  |      | 35.0 | 35.0  | 35.0 | 35.0 | 35.0 | 35.0 |
| Actuated g/C Ratio        |       | 0.18  |      |       | 0.30  |      | 0.39 | 0.39  | 0.39 | 0.39 | 0.39 | 0.39 |
| Clearance Time (s)        |       | 3.0   |      |       | 3.0   |      | 3.0  | 3.0   | 3.0  | 3.0  | 3.0  | 3.0  |
| Lane Grp Cap (vph)        |       | 582   |      |       | 977   |      | 234  | 652   | 554  | 119  | 652  | 554  |
| v/s Ratio Prot            |       | c0.13 |      |       | c0.28 |      |      | c0.33 |      |      | 0.23 |      |
| v/s Ratio Perm            |       |       |      |       |       |      | 0.08 |       | 0.05 | 0.29 |      | 0.02 |
| v/c Ratio                 |       | 0.74  |      |       | 0.95  |      | 0.22 | 0.86  | 0.12 | 0.74 | 0.60 | 0.04 |
| Uniform Delay, d1         |       | 35.0  |      |       | 30.8  |      | 18.4 | 25.3  | 17.6 | 23.6 | 21.9 | 17.1 |
| Progression Factor        |       | 1.15  |      |       | 1.00  |      | 1.02 | 0.89  | 1.08 | 0.76 | 0.73 | 0.46 |
| Incremental Delay, d2     |       | 7.8   |      |       | 18.7  |      | 0.9  | 6.6   | 0.2  | 30.9 | 3.7  | 0.1  |
| Delay (s)                 |       | 48.2  |      |       | 49.5  |      | 19.6 | 29.2  | 19.2 | 48.8 | 19.8 | 8.1  |
| Level of Service          |       | D     |      |       | D     |      | B    | C     | B    | D    | B    | A    |
| Approach Delay (s)        |       | 48.2  |      |       | 49.5  |      |      | 27.1  |      |      | 23.5 |      |
| Approach LOS              |       | D     |      |       | D     |      |      | C     |      |      | C    |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 38.0  | HCM Level of Service | D    |
| HCM Volume to Capacity ratio      | 0.87  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 87.4% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3437: P Street & 29th St off ramp

6/1/2005



| Movement               | WBL  | WBT   | SBT   | SBR  | SWL   | SWR  |
|------------------------|------|-------|-------|------|-------|------|
| Lane Configurations    | ↖    | ↑↑    | ↑↑↘   |      | ↘↘    | ↗    |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900  | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0  | 4.0   | 4.0   |      | 4.0   | 4.0  |
| Lane Util. Factor      | 1.00 | 0.95  | 0.91  |      | 0.97  | 0.91 |
| Frt                    | 1.00 | 1.00  | 0.95  |      | 0.98  | 0.85 |
| Flt Protected          | 0.95 | 1.00  | 1.00  |      | 0.96  | 1.00 |
| Satd. Flow (prot)      | 1593 | 3362  | 4693  |      | 3398  | 1441 |
| Flt Permitted          | 0.95 | 1.00  | 1.00  |      | 0.96  | 1.00 |
| Satd. Flow (perm)      | 1593 | 3362  | 4693  |      | 3398  | 1441 |
| Volume (vph)           | 81   | 753   | 304   | 132  | 532   | 328  |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 81   | 753   | 304   | 132  | 532   | 328  |
| RTOR Reduction (vph)   | 53   | 0     | 88    | 0    | 0     | 0    |
| Lane Group Flow (vph)  | 28   | 753   | 348   | 0    | 606   | 254  |
| Parking (#/hr)         | 0    | 0     | 0     | 0    |       |      |
| Turn Type              | Perm |       |       |      |       | Perm |
| Protected Phases       |      | 6     | 7     |      | 8     |      |
| Permitted Phases       | 6    |       |       |      |       | 8    |
| Actuated Green, G (s)  | 32.0 | 32.0  | 19.0  |      | 30.0  | 30.0 |
| Effective Green, g (s) | 31.0 | 31.0  | 18.0  |      | 29.0  | 29.0 |
| Actuated g/C Ratio     | 0.34 | 0.34  | 0.20  |      | 0.32  | 0.32 |
| Clearance Time (s)     | 3.0  | 3.0   | 3.0   |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)     | 549  | 1158  | 939   |      | 1095  | 464  |
| v/s Ratio Prot         |      | c0.22 | c0.07 |      | c0.18 |      |
| v/s Ratio Perm         | 0.02 |       |       |      |       | 0.18 |
| v/c Ratio              | 0.05 | 0.65  | 0.37  |      | 0.55  | 0.55 |
| Uniform Delay, d1      | 19.7 | 24.9  | 31.1  |      | 25.2  | 25.1 |
| Progression Factor     | 0.22 | 0.62  | 0.48  |      | 1.00  | 1.00 |
| Incremental Delay, d2  | 0.2  | 2.5   | 1.1   |      | 2.0   | 4.6  |
| Delay (s)              | 4.5  | 18.0  | 16.0  |      | 27.2  | 29.7 |
| Level of Service       | A    | B     | B     |      | C     | C    |
| Approach Delay (s)     |      | 16.7  | 16.0  |      | 27.9  |      |
| Approach LOS           |      | B     | B     |      | C     |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 21.1  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.55  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 58.2% | ICU Level of Service | B    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |



HCM Signalized Intersection Capacity Analysis  
 3438: P Street & Alhambra

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL   | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|-------|------|-------|------|------|
| Lane Configurations    |      |      |      |      | ↕↕↕  |      | ↖    | ↗     |      | ↖     | ↗    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      | 4.0  | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor      |      |      |      |      | 0.91 |      | 1.00 | 1.00  |      | 1.00  | 1.00 |      |
| Frt                    |      |      |      |      | 0.97 |      | 1.00 | 0.95  |      | 1.00  | 0.96 |      |
| Flt Protected          |      |      |      |      | 1.00 |      | 0.95 | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)      |      |      |      |      | 4912 |      | 1770 | 1773  |      | 1770  | 1791 |      |
| Flt Permitted          |      |      |      |      | 1.00 |      | 0.95 | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)      |      |      |      |      | 4912 |      | 1770 | 1773  |      | 1770  | 1791 |      |
| Volume (vph)           | 0    | 0    | 0    | 74   | 845  | 240  | 91   | 357   | 168  | 287   | 253  | 87   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 74   | 845  | 240  | 91   | 357   | 168  | 287   | 253  | 87   |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 52   | 0    | 0    | 19    | 0    | 0     | 14   | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 1107 | 0    | 91   | 506   | 0    | 287   | 326  | 0    |
| Turn Type              |      |      |      |      | Perm |      | Prot |       |      | Prot  |      |      |
| Protected Phases       |      |      |      |      |      | 6    | 3    | 8     |      | 7     | 4    |      |
| Permitted Phases       |      |      |      |      | 6    |      |      |       |      |       |      |      |
| Actuated Green, G (s)  |      |      |      |      |      | 25.0 | 11.0 | 35.0  |      | 21.0  | 45.0 |      |
| Effective Green, g (s) |      |      |      |      |      | 24.0 | 10.0 | 34.0  |      | 20.0  | 44.0 |      |
| Actuated g/C Ratio     |      |      |      |      |      | 0.27 | 0.11 | 0.38  |      | 0.22  | 0.49 |      |
| Clearance Time (s)     |      |      |      |      |      | 3.0  | 3.0  | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     |      |      |      |      |      | 1310 | 197  | 670   |      | 393   | 876  |      |
| v/s Ratio Prot         |      |      |      |      |      |      | 0.05 | c0.29 |      | c0.16 | 0.18 |      |
| v/s Ratio Perm         |      |      |      |      |      | 0.23 |      |       |      |       |      |      |
| v/c Ratio              |      |      |      |      |      | 0.84 | 0.46 | 0.76  |      | 0.73  | 0.37 |      |
| Uniform Delay, d1      |      |      |      |      |      | 31.2 | 37.5 | 24.4  |      | 32.5  | 14.4 |      |
| Progression Factor     |      |      |      |      |      | 1.00 | 1.00 | 1.00  |      | 0.72  | 0.59 |      |
| Incremental Delay, d2  |      |      |      |      |      | 6.8  | 7.6  | 7.8   |      | 7.7   | 0.8  |      |
| Delay (s)              |      |      |      |      |      | 38.1 | 45.1 | 32.1  |      | 31.0  | 9.2  |      |
| Level of Service       |      |      |      |      |      | D    | D    | C     |      | C     | A    |      |
| Approach Delay (s)     |      | 0.0  |      |      |      | 38.1 |      | 34.1  |      |       | 19.2 |      |
| Approach LOS           |      | A    |      |      |      | D    |      | C     |      |       | B    |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 32.1  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.78  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 78.1% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

3444: Q Street & 29th Street

6/1/2005



| Movement                          | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|-------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations               |      | ↑↑    |      |      |      |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0   |      |      |      |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor                 |      | 0.95  |      |      |      |      |      |      |      |      | 0.91 |      |
| Fr <sub>t</sub>                   |      | 0.97  |      |      |      |      |      |      |      |      | 1.00 |      |
| Fl <sub>t</sub> Protected         |      | 1.00  |      |      |      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (prot)                 |      | 3427  |      |      |      |      |      |      |      |      | 5035 |      |
| Fl <sub>t</sub> Permitted         |      | 1.00  |      |      |      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (perm)                 |      | 3427  |      |      |      |      |      |      |      |      | 5035 |      |
| Volume (vph)                      | 0    | 434   | 116  | 0    | 0    | 0    | 0    | 0    | 0    | 186  | 743  | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 434   | 116  | 0    | 0    | 0    | 0    | 0    | 0    | 186  | 743  | 0    |
| RTOR Reduction (vph)              | 0    | 27    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 48   | 0    |
| Lane Group Flow (vph)             | 0    | 523   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 881  | 0    |
| Turn Type                         |      |       |      |      |      |      |      |      |      | Perm |      |      |
| Protected Phases                  |      | 2     |      |      |      |      |      |      |      |      |      | 4    |
| Permitted Phases                  |      |       |      |      |      |      |      |      |      | 4    |      |      |
| Actuated Green, G (s)             |      | 42.0  |      |      |      |      |      |      |      |      | 42.0 |      |
| Effective Green, g (s)            |      | 41.0  |      |      |      |      |      |      |      |      | 41.0 |      |
| Actuated g/C Ratio                |      | 0.46  |      |      |      |      |      |      |      |      | 0.46 |      |
| Clearance Time (s)                |      | 3.0   |      |      |      |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |      | 1561  |      |      |      |      |      |      |      |      | 2294 |      |
| v/s Ratio Prot                    |      | c0.15 |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm                    |      |       |      |      |      |      |      |      |      |      | 0.17 |      |
| v/c Ratio                         |      | 0.34  |      |      |      |      |      |      |      |      | 0.38 |      |
| Uniform Delay, d <sub>1</sub>     |      | 15.7  |      |      |      |      |      |      |      |      | 16.2 |      |
| Progression Factor                |      | 1.00  |      |      |      |      |      |      |      |      | 0.32 |      |
| Incremental Delay, d <sub>2</sub> |      | 0.6   |      |      |      |      |      |      |      |      | 0.4  |      |
| Delay (s)                         |      | 16.3  |      |      |      |      |      |      |      |      | 5.6  |      |
| Level of Service                  |      | B     |      |      |      |      |      |      |      |      | A    |      |
| Approach Delay (s)                |      | 16.3  |      |      | 0.0  |      |      | 0.0  |      |      | 5.6  |      |
| Approach LOS                      |      | B     |      |      | A    |      |      | A    |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 9.6   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.36  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 40.5% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
3467: N Street & Alhambra

6/1/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|-------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations    |      | ↕     |      |      | ↕    |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      | 4.0  |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00  |      |      | 1.00 |      |      | 1.00  |      |      | 1.00 |      |
| Frt                    |      | 0.96  |      |      | 0.99 |      |      | 0.99  |      |      | 0.99 |      |
| Flt Protected          |      | 0.98  |      |      | 0.99 |      |      | 1.00  |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 1571  |      |      | 1637 |      |      | 1649  |      |      | 1662 |      |
| Flt Permitted          |      | 0.74  |      |      | 0.85 |      |      | 0.97  |      |      | 0.98 |      |
| Satd. Flow (perm)      |      | 1177  |      |      | 1400 |      |      | 1607  |      |      | 1638 |      |
| Volume (vph)           | 224  | 162   | 193  | 54   | 199  | 30   | 25   | 497   | 62   | 12   | 418  | 24   |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 224  | 162   | 193  | 54   | 199  | 30   | 25   | 497   | 62   | 12   | 418  | 24   |
| RTOR Reduction (vph)   | 0    | 20    | 0    | 0    | 5    | 0    | 0    | 5     | 0    | 0    | 2    | 0    |
| Lane Group Flow (vph)  | 0    | 559   |      | 0    | 0    | 278  | 0    | 0     | 579  | 0    | 0    | 452  |
| Parking (#/hr)         | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |       |      | Perm |      |      | Perm |       |      | Perm |      |      |
| Protected Phases       |      | 4     |      |      | 8    |      |      | 2     |      |      | 6    |      |
| Permitted Phases       | 4    |       |      | 8    |      |      | 2    |       |      | 6    |      |      |
| Actuated Green, G (s)  |      | 47.0  |      |      | 47.0 |      |      | 37.0  |      |      | 37.0 |      |
| Effective Green, g (s) |      | 46.0  |      |      | 46.0 |      |      | 36.0  |      |      | 36.0 |      |
| Actuated g/C Ratio     |      | 0.51  |      |      | 0.51 |      |      | 0.40  |      |      | 0.40 |      |
| Clearance Time (s)     |      | 3.0   |      |      | 3.0  |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 602   |      |      | 716  |      |      | 643   |      |      | 655  |      |
| v/s Ratio Prot         |      |       |      |      |      |      |      |       |      |      |      |      |
| v/s Ratio Perm         |      | c0.47 |      |      | 0.20 |      |      | c0.36 |      |      | 0.28 |      |
| v/c Ratio              |      | 0.93  |      |      | 0.39 |      |      | 0.90  |      |      | 0.69 |      |
| Uniform Delay, d1      |      | 20.5  |      |      | 13.4 |      |      | 25.3  |      |      | 22.4 |      |
| Progression Factor     |      | 0.56  |      |      | 1.00 |      |      | 0.53  |      |      | 0.27 |      |
| Incremental Delay, d2  |      | 19.3  |      |      | 1.6  |      |      | 11.6  |      |      | 4.5  |      |
| Delay (s)              |      | 30.8  |      |      | 15.0 |      |      | 24.9  |      |      | 10.5 |      |
| Level of Service       |      | C     |      |      | B    |      |      | C     |      |      | B    |      |
| Approach Delay (s)     |      | 30.8  |      |      | 15.0 |      |      | 24.9  |      |      | 10.5 |      |
| Approach LOS           |      | C     |      |      | B    |      |      | C     |      |      | B    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 21.8  | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 0.92  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 99.6% | ICU Level of Service | F   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 5802: K Street & 29th Street

6/1/2005



| Movement                          | EBL                 | EBT  | EBR   | WBL  | WBT   | WBR                  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|---------------------|------|-------|------|-------|----------------------|------|------|------|------|------|------|
| Lane Configurations               |                     | ↑    | ↗     | ↖    | ↑     |                      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)                | 1900                | 1900 | 1900  | 1900 | 1900  | 1900                 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |                     | 4.0  | 4.0   | 4.0  | 4.0   |                      |      |      |      |      | 4.0  |      |
| Lane Util. Factor                 |                     | 1.00 | 1.00  | 1.00 | 1.00  |                      |      |      |      |      | 0.91 |      |
| Fr <sub>t</sub>                   |                     | 1.00 | 0.85  | 1.00 | 1.00  |                      |      |      |      |      | 0.96 |      |
| Fit Protected                     |                     | 1.00 | 1.00  | 0.95 | 1.00  |                      |      |      |      |      | 1.00 |      |
| Satd. Flow (prot)                 |                     | 1863 | 1583  | 1770 | 1863  |                      |      |      |      |      | 4867 |      |
| Fit Permitted                     |                     | 1.00 | 1.00  | 0.68 | 1.00  |                      |      |      |      |      | 1.00 |      |
| Satd. Flow (perm)                 |                     | 1863 | 1583  | 1268 | 1863  |                      |      |      |      |      | 4867 |      |
| Volume (vph)                      | 0                   | 119  | 257   | 198  | 647   | 0                    | 0    | 0    | 0    | 89   | 809  | 321  |
| Peak-hour factor, PHF             | 1.00                | 1.00 | 1.00  | 1.00 | 1.00  | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0                   | 119  | 257   | 198  | 647   | 0                    | 0    | 0    | 0    | 89   | 809  | 321  |
| RTOR Reduction (vph)              | 0                   | 0    | 26    | 0    | 0     | 0                    | 0    | 0    | 0    | 0    | 72   | 0    |
| Lane Group Flow (vph)             | 0                   | 119  | 231   | 198  | 647   | 0                    | 0    | 0    | 0    | 0    | 1147 | 0    |
| Turn Type                         |                     |      | Perm  | Perm |       |                      |      |      |      |      | Perm |      |
| Protected Phases                  |                     | 4    |       |      | 8     |                      |      |      |      |      |      | 6    |
| Permitted Phases                  |                     |      | 4     | 8    |       |                      |      |      |      |      | 6    |      |
| Actuated Green, G (s)             |                     | 50.0 | 50.0  | 50.0 | 50.0  |                      |      |      |      |      | 34.0 |      |
| Effective Green, g (s)            |                     | 49.0 | 49.0  | 49.0 | 49.0  |                      |      |      |      |      | 33.0 |      |
| Actuated g/C Ratio                |                     | 0.54 | 0.54  | 0.54 | 0.54  |                      |      |      |      |      | 0.37 |      |
| Clearance Time (s)                |                     | 3.0  | 3.0   | 3.0  | 3.0   |                      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |                     | 1014 | 862   | 690  | 1014  |                      |      |      |      |      | 1785 |      |
| v/s Ratio Prot                    |                     | 0.06 |       |      | c0.35 |                      |      |      |      |      |      |      |
| v/s Ratio Perm                    |                     |      | 0.15  | 0.16 |       |                      |      |      |      |      | 0.24 |      |
| v/c Ratio                         |                     | 0.12 | 0.27  | 0.29 | 0.64  |                      |      |      |      |      | 0.64 |      |
| Uniform Delay, d <sub>1</sub>     |                     | 10.0 | 10.9  | 11.1 | 14.3  |                      |      |      |      |      | 23.6 |      |
| Progression Factor                |                     | 0.70 | 0.69  | 0.59 | 0.55  |                      |      |      |      |      | 0.78 |      |
| Incremental Delay, d <sub>2</sub> |                     | 0.2  | 0.8   | 0.9  | 2.7   |                      |      |      |      |      | 1.3  |      |
| Delay (s)                         |                     | 7.2  | 8.3   | 7.4  | 10.6  |                      |      |      |      |      | 19.8 |      |
| Level of Service                  |                     | A    | A     | A    | B     |                      |      |      |      |      | B    |      |
| Approach Delay (s)                |                     | 7.9  |       |      | 9.8   |                      |      | 0.0  |      |      | 19.8 |      |
| Approach LOS                      |                     | A    |       |      | A     |                      |      | A    |      |      | B    |      |
| <b>Intersection Summary</b>       |                     |      |       |      |       |                      |      |      |      |      |      |      |
| HCM Average Control Delay         |                     |      | 14.5  |      |       | HCM Level of Service |      |      |      |      | B    |      |
| HCM Volume to Capacity ratio      |                     |      | 0.64  |      |       |                      |      |      |      |      |      |      |
| Actuated Cycle Length (s)         |                     |      | 90.0  |      |       | Sum of lost time (s) |      |      |      | 8.0  |      |      |
| Intersection Capacity Utilization |                     |      | 65.3% |      |       | ICU Level of Service |      |      |      |      | C    |      |
| Analysis Period (min)             |                     |      | 15    |      |       |                      |      |      |      |      |      |      |
| c                                 | Critical Lane Group |      |       |      |       |                      |      |      |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
 5848: J Street & 30th Street

6/1/2005



| Movement               | EBL2 | EBL  | EBT   | WBR2 | NBL   | NBT  | NBR  |
|------------------------|------|------|-------|------|-------|------|------|
| Lane Configurations    |      | ↘    | ↕↕↕   | ↗    | ↘     | ↕↕   |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor      |      | 0.86 | 0.86  |      | 0.91  | 0.91 |      |
| Frt                    |      | 1.00 | 1.00  |      | 1.00  | 0.94 |      |
| Flt Protected          |      | 0.95 | 1.00  |      | 0.95  | 0.99 |      |
| Satd. Flow (prot)      |      | 1522 | 4646  |      | 1610  | 3154 |      |
| Flt Permitted          |      | 0.95 | 1.00  |      | 0.95  | 0.99 |      |
| Satd. Flow (perm)      |      | 1522 | 4646  |      | 1610  | 3154 |      |
| Volume (vph)           | 165  | 100  | 884   | 0    | 295   | 203  | 195  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 165  | 100  | 884   | 0    | 295   | 203  | 195  |
| RTOR Reduction (vph)   | 0    | 66   | 0     | 0    | 0     | 45   | 0    |
| Lane Group Flow (vph)  | 0    | 199  | 884   | 0    | 230   | 418  | 0    |
| Parking (#/hr)         |      |      | 0     | 0    |       |      | 0    |
| Turn Type              | Perm | Perm |       | Free | Perm  |      |      |
| Protected Phases       |      |      | 2     |      |       | 8    |      |
| Permitted Phases       | 2    | 2    |       | Free | 8     |      |      |
| Actuated Green, G (s)  |      | 42.0 | 42.0  |      | 42.0  | 42.0 |      |
| Effective Green, g (s) |      | 41.0 | 41.0  |      | 41.0  | 41.0 |      |
| Actuated g/C Ratio     |      | 0.46 | 0.46  |      | 0.46  | 0.46 |      |
| Clearance Time (s)     |      | 3.0  | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     |      | 693  | 2117  |      | 733   | 1437 |      |
| v/s Ratio Prot         |      |      | c0.19 |      |       |      |      |
| v/s Ratio Perm         |      | 0.13 |       |      | c0.14 | 0.13 |      |
| v/c Ratio              |      | 0.29 | 0.42  |      | 0.31  | 0.29 |      |
| Uniform Delay, d1      |      | 15.3 | 16.5  |      | 15.6  | 15.4 |      |
| Progression Factor     |      | 0.46 | 0.61  |      | 0.27  | 0.12 |      |
| Incremental Delay, d2  |      | 0.6  | 0.4   |      | 1.0   | 0.5  |      |
| Delay (s)              |      | 7.6  | 10.3  |      | 5.1   | 2.3  |      |
| Level of Service       |      | A    | B     |      | A     | A    |      |
| Approach Delay (s)     |      |      | 9.7   |      |       | 3.2  |      |
| Approach LOS           |      |      | A     |      |       | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 7.3   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.37  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 37.4% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 5849: L Street & 30th Street

6/1/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT   | WBR  | NBL                  | NBT   | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|-------|------|-------|------|----------------------|-------|------|------|------|------|
| Lane Configurations               |      |      |       |      | ↑↑↑   |      | ↙                    | ↑↑↑   |      |      |      |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 | 1900                 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      |      |       |      | 4.0   |      | 4.0                  | 4.0   |      |      |      |      |
| Lane Util. Factor                 |      |      |       |      | 0.91  |      | 0.86                 | 0.86  |      |      |      |      |
| Frt                               |      |      |       |      | 0.97  |      | 1.00                 | 1.00  |      |      |      |      |
| Flt Protected                     |      |      |       |      | 1.00  |      | 0.95                 | 1.00  |      |      |      |      |
| Satd. Flow (prot)                 |      |      |       |      | 4925  |      | 1522                 | 4646  |      |      |      |      |
| Flt Permitted                     |      |      |       |      | 1.00  |      | 0.95                 | 1.00  |      |      |      |      |
| Satd. Flow (perm)                 |      |      |       |      | 4925  |      | 1522                 | 4646  |      |      |      |      |
| Volume (vph)                      | 0    | 0    | 0     | 0    | 439   | 117  | 288                  | 1034  | 0    | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00                 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 0    | 439   | 117  | 288                  | 1034  | 0    | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 0    | 44    | 0    | 128                  | 0     | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 0    | 512   | 0    | 160                  | 1034  | 0    | 0    | 0    | 0    |
| Parking (#/hr)                    |      |      |       |      |       |      | 0                    | 0     |      |      |      |      |
| Turn Type                         |      |      |       |      |       |      | Perm                 |       |      |      |      |      |
| Protected Phases                  |      |      |       |      | 6     |      |                      | 8     |      |      |      |      |
| Permitted Phases                  |      |      |       |      |       |      | 8                    |       |      |      |      |      |
| Actuated Green, G (s)             |      |      |       |      | 37.0  |      | 47.0                 | 47.0  |      |      |      |      |
| Effective Green, g (s)            |      |      |       |      | 36.0  |      | 46.0                 | 46.0  |      |      |      |      |
| Actuated g/C Ratio                |      |      |       |      | 0.40  |      | 0.51                 | 0.51  |      |      |      |      |
| Clearance Time (s)                |      |      |       |      | 3.0   |      | 3.0                  | 3.0   |      |      |      |      |
| Lane Grp Cap (vph)                |      |      |       |      | 1970  |      | 778                  | 2375  |      |      |      |      |
| v/s Ratio Prot                    |      |      |       |      | c0.10 |      |                      | c0.22 |      |      |      |      |
| v/s Ratio Perm                    |      |      |       |      |       |      | 0.11                 |       |      |      |      |      |
| v/c Ratio                         |      |      |       |      | 0.26  |      | 0.21                 | 0.44  |      |      |      |      |
| Uniform Delay, d1                 |      |      |       |      | 18.1  |      | 12.0                 | 13.8  |      |      |      |      |
| Progression Factor                |      |      |       |      | 0.52  |      | 0.02                 | 0.44  |      |      |      |      |
| Incremental Delay, d2             |      |      |       |      | 0.3   |      | 0.4                  | 0.4   |      |      |      |      |
| Delay (s)                         |      |      |       |      | 9.7   |      | 0.7                  | 6.5   |      |      |      |      |
| Level of Service                  |      |      |       |      | A     |      | A                    | A     |      |      |      |      |
| Approach Delay (s)                |      | 0.0  |       |      | 9.7   |      |                      | 5.2   |      |      | 0.0  |      |
| Approach LOS                      |      | A    |       |      | A     |      |                      | A     |      |      | A    |      |
| <b>Intersection Summary</b>       |      |      |       |      |       |      |                      |       |      |      |      |      |
| HCM Average Control Delay         |      |      | 6.6   |      |       |      | HCM Level of Service |       |      |      | A    |      |
| HCM Volume to Capacity ratio      |      |      | 0.36  |      |       |      |                      |       |      |      |      |      |
| Actuated Cycle Length (s)         |      |      | 90.0  |      |       |      | Sum of lost time (s) |       |      |      | 8.0  |      |
| Intersection Capacity Utilization |      |      | 44.3% |      |       |      | ICU Level of Service |       |      |      | A    |      |
| Analysis Period (min)             |      |      | 15    |      |       |      |                      |       |      |      |      |      |
| c Critical Lane Group             |      |      |       |      |       |      |                      |       |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
5880: N Street & 30th Street

6/1/2005



| Movement               | EBL  | EBT   | WBT  | WBR  | NBL  | NBT  | NBR   | NEL2 | NEL   | NER  |
|------------------------|------|-------|------|------|------|------|-------|------|-------|------|
| Lane Configurations    | ↖    | ↑     | ↗    |      |      | ↖↗   |       |      | ↖↗    |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0  | 4.0   | 4.0  |      |      | 4.0  |       |      | 4.0   |      |
| Lane Util. Factor      | 1.00 | 1.00  | 1.00 |      |      | 0.91 |       |      | 0.97  |      |
| Frt                    | 1.00 | 1.00  | 0.99 |      |      | 0.98 |       |      | 0.99  |      |
| Flt Protected          | 0.95 | 1.00  | 1.00 |      |      | 0.99 |       |      | 0.96  |      |
| Satd. Flow (prot)      | 1770 | 1863  | 1836 |      |      | 4965 |       |      | 3410  |      |
| Flt Permitted          | 0.40 | 1.00  | 1.00 |      |      | 0.99 |       |      | 0.96  |      |
| Satd. Flow (perm)      | 748  | 1863  | 1836 |      |      | 4965 |       |      | 3410  |      |
| Volume (vph)           | 63   | 276   | 208  | 25   | 115  | 537  | 78    | 492  | 730   | 119  |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 63   | 276   | 208  | 25   | 115  | 537  | 78    | 492  | 730   | 119  |
| RTOR Reduction (vph)   | 0    | 0     | 5    | 0    | 0    | 16   | 0     | 0    | 0     | 0    |
| Lane Group Flow (vph)  | 63   | 276   | 228  | 0    | 0    | 714  | 0     | 0    | 1341  | 0    |
| Turn Type              | Perm |       |      | Perm |      |      | Split |      |       |      |
| Protected Phases       |      | 4     | 8    |      |      | 2    |       | 6    | 6     |      |
| Permitted Phases       | 4    |       |      |      | 2    |      |       |      |       |      |
| Actuated Green, G (s)  | 20.0 | 20.0  | 20.0 |      |      | 18.0 |       |      | 43.0  |      |
| Effective Green, g (s) | 19.0 | 19.0  | 19.0 |      |      | 17.0 |       |      | 42.0  |      |
| Actuated g/C Ratio     | 0.21 | 0.21  | 0.21 |      |      | 0.19 |       |      | 0.47  |      |
| Clearance Time (s)     | 3.0  | 3.0   | 3.0  |      |      | 3.0  |       |      | 3.0   |      |
| Lane Grp Cap (vph)     | 158  | 393   | 388  |      |      | 938  |       |      | 1591  |      |
| v/s Ratio Prot         |      | c0.15 | 0.12 |      |      |      |       |      | c0.39 |      |
| v/s Ratio Perm         | 0.08 |       |      |      |      | 0.14 |       |      |       |      |
| v/c Ratio              | 0.40 | 0.70  | 0.59 |      |      | 0.76 |       |      | 0.84  |      |
| Uniform Delay, d1      | 30.6 | 32.9  | 32.0 |      |      | 34.6 |       |      | 21.1  |      |
| Progression Factor     | 1.36 | 1.33  | 0.74 |      |      | 0.82 |       |      | 1.00  |      |
| Incremental Delay, d2  | 5.3  | 7.3   | 5.8  |      |      | 5.8  |       |      | 5.6   |      |
| Delay (s)              | 46.8 | 51.2  | 29.5 |      |      | 34.3 |       |      | 26.7  |      |
| Level of Service       | D    | D     | C    |      |      | C    |       |      | C     |      |
| Approach Delay (s)     |      | 50.4  | 29.5 |      |      | 34.3 |       |      | 26.7  |      |
| Approach LOS           |      | D     | C    |      |      | C    |       |      | C     |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 32.1  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.79  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 82.3% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
5882: P Street & 30th Street

6/1/2005



| Movement               | WBT   | WBR  | NBL2 | NBL   | NBT  |
|------------------------|-------|------|------|-------|------|
| Lane Configurations    | ↑↑↓   |      |      | ↑     | ↑↑↑  |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0   |      |      | 4.0   | 4.0  |
| Lane Util. Factor      | 0.91  |      |      | 1.00  | 0.91 |
| Frt                    | 0.95  |      |      | 1.00  | 1.00 |
| Flt Protected          | 1.00  |      |      | 0.95  | 1.00 |
| Satd. Flow (prot)      | 4818  |      |      | 1593  | 4916 |
| Flt Permitted          | 1.00  |      |      | 0.95  | 1.00 |
| Satd. Flow (perm)      | 4818  |      |      | 1593  | 4916 |
| Volume (vph)           | 565   | 305  | 308  | 218   | 442  |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 565   | 305  | 308  | 218   | 442  |
| RTOR Reduction (vph)   | 0     | 0    | 0    | 56    | 0    |
| Lane Group Flow (vph)  | 870   | 0    | 0    | 470   | 442  |
| Parking (#/hr)         |       | 0    | 0    | 0     | 0    |
| Turn Type              |       |      | Perm | Perm  |      |
| Protected Phases       | 6     |      |      |       | 8    |
| Permitted Phases       |       |      | 8    | 8     |      |
| Actuated Green, G (s)  | 33.0  |      |      | 51.0  | 51.0 |
| Effective Green, g (s) | 32.0  |      |      | 50.0  | 50.0 |
| Actuated g/C Ratio     | 0.36  |      |      | 0.56  | 0.56 |
| Clearance Time (s)     | 3.0   |      |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)     | 1713  |      |      | 885   | 2731 |
| v/s Ratio Prot         | c0.18 |      |      |       | 0.09 |
| v/s Ratio Perm         |       |      |      | c0.29 |      |
| v/c Ratio              | 0.51  |      |      | 0.53  | 0.16 |
| Uniform Delay, d1      | 22.8  |      |      | 12.6  | 9.8  |
| Progression Factor     | 0.30  |      |      | 1.00  | 1.00 |
| Incremental Delay, d2  | 0.7   |      |      | 2.3   | 0.1  |
| Delay (s)              | 7.5   |      |      | 14.9  | 9.9  |
| Level of Service       | A     |      |      | B     | A    |
| Approach Delay (s)     | 7.5   |      |      |       | 12.6 |
| Approach LOS           | A     |      |      |       | B    |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.2  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.52  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 53.6% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
5886: Capitol & 30th Street

6/1/2005



| Movement               | EBL   | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|-------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    | ↖     | ↗    |      |      | ↖     | ↗    |      | ↖    | ↗    |      |      |      |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0   | 4.0  |      |      | 4.0   |      |      | 4.0  |      |      |      |      |
| Lane Util. Factor      | 1.00  | 0.95 |      |      | 0.95  |      |      | 0.91 |      |      |      |      |
| Frt                    | 1.00  | 1.00 |      |      | 0.95  |      |      | 0.98 |      |      |      |      |
| Flt Protected          | 0.95  | 1.00 |      |      | 1.00  |      |      | 1.00 |      |      |      |      |
| Satd. Flow (prot)      | 1770  | 3539 |      |      | 3353  |      |      | 4977 |      |      |      |      |
| Flt Permitted          | 0.95  | 1.00 |      |      | 1.00  |      |      | 1.00 |      |      |      |      |
| Satd. Flow (perm)      | 1770  | 3539 |      |      | 3353  |      |      | 4977 |      |      |      |      |
| Volume (vph)           | 125   | 234  | 0    | 0    | 472   | 254  | 139  | 1195 | 168  | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 125   | 234  | 0    | 0    | 472   | 254  | 139  | 1195 | 168  | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0     | 0    | 0    | 0    | 79    | 0    | 0    | 17   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 125   | 234  | 0    | 0    | 647   | 0    | 0    | 1485 | 0    | 0    | 0    | 0    |
| Turn Type              | Prot  |      |      | Perm |       |      |      |      |      |      |      |      |
| Protected Phases       | 7     | 4    |      |      | 8     |      |      | 2    |      |      |      |      |
| Permitted Phases       |       |      |      |      |       |      | 2    |      |      |      |      |      |
| Actuated Green, G (s)  | 15.0  | 47.0 |      |      | 29.0  |      |      | 37.0 |      |      |      |      |
| Effective Green, g (s) | 14.0  | 46.0 |      |      | 28.0  |      |      | 36.0 |      |      |      |      |
| Actuated g/C Ratio     | 0.16  | 0.51 |      |      | 0.31  |      |      | 0.40 |      |      |      |      |
| Clearance Time (s)     | 3.0   | 3.0  |      |      | 3.0   |      |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)     | 275   | 1809 |      |      | 1043  |      |      | 1991 |      |      |      |      |
| v/s Ratio Prot         | c0.07 | 0.07 |      |      | c0.19 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |       |      |      |      |       |      |      | 0.30 |      |      |      |      |
| v/c Ratio              | 0.45  | 0.13 |      |      | 0.62  |      |      | 0.75 |      |      |      |      |
| Uniform Delay, d1      | 34.5  | 11.5 |      |      | 26.5  |      |      | 23.1 |      |      |      |      |
| Progression Factor     | 0.86  | 0.95 |      |      | 0.12  |      |      | 0.72 |      |      |      |      |
| Incremental Delay, d2  | 5.0   | 0.1  |      |      | 1.4   |      |      | 1.8  |      |      |      |      |
| Delay (s)              | 34.7  | 11.0 |      |      | 4.5   |      |      | 18.5 |      |      |      |      |
| Level of Service       | C     | B    |      |      | A     |      |      | B    |      |      |      |      |
| Approach Delay (s)     |       | 19.3 |      |      | 4.5   |      |      | 18.5 |      |      | 0.0  |      |
| Approach LOS           |       | B    |      |      | A     |      |      | B    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 14.7  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.65  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 67.8% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
5888: Capitol & 29th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL   | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|-------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑↑   |      | ↖     | ↑↑   |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      | 4.0   | 4.0  |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 0.95 |      | 1.00  | 0.95 |      |      |      |      |      | 0.91 |      |
| Frt                    |      | 0.92 |      | 1.00  | 1.00 |      |      |      |      |      | 0.97 |      |
| Flt Protected          |      | 1.00 |      | 0.95  | 1.00 |      |      |      |      |      | 0.99 |      |
| Satd. Flow (prot)      |      | 3092 |      | 1770  | 3539 |      |      |      |      |      | 4740 |      |
| Flt Permitted          |      | 1.00 |      | 0.45  | 1.00 |      |      |      |      |      | 0.99 |      |
| Satd. Flow (perm)      |      | 3092 |      | 841   | 3539 |      |      |      |      |      | 4740 |      |
| Volume (vph)           | 0    | 214  | 247  | 162   | 482  | 0    | 0    | 0    | 0    | 147  | 773  | 226  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 214  | 247  | 162   | 482  | 0    | 0    | 0    | 0    | 147  | 773  | 226  |
| RTOR Reduction (vph)   | 0    | 49   | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 47   | 0    |
| Lane Group Flow (vph)  | 0    | 412  | 0    | 162   | 482  | 0    | 0    | 0    | 0    | 0    | 1099 | 0    |
| Parking (#/hr)         |      | 0    | 0    |       |      |      |      |      |      |      | 0    | 0    |
| Turn Type              |      |      |      | Perm  |      |      |      |      |      |      | Perm |      |
| Protected Phases       |      | 4    |      |       | 8    |      |      |      |      |      |      | 6    |
| Permitted Phases       |      |      |      | 8     |      |      |      |      |      | 6    |      |      |
| Actuated Green, G (s)  |      | 45.0 |      | 45.0  | 45.0 |      |      |      |      |      | 39.0 |      |
| Effective Green, g (s) |      | 44.0 |      | 44.0  | 44.0 |      |      |      |      |      | 38.0 |      |
| Actuated g/C Ratio     |      | 0.49 |      | 0.49  | 0.49 |      |      |      |      |      | 0.42 |      |
| Clearance Time (s)     |      | 3.0  |      | 3.0   | 3.0  |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 1512 |      | 411   | 1730 |      |      |      |      |      | 2001 |      |
| v/s Ratio Prot         |      | 0.13 |      |       | 0.14 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      |      | c0.19 |      |      |      |      |      |      | 0.23 |      |
| v/c Ratio              |      | 0.27 |      | 0.39  | 0.28 |      |      |      |      |      | 0.55 |      |
| Uniform Delay, d1      |      | 13.6 |      | 14.6  | 13.6 |      |      |      |      |      | 19.6 |      |
| Progression Factor     |      | 0.62 |      | 0.52  | 0.50 |      |      |      |      |      | 0.28 |      |
| Incremental Delay, d2  |      | 0.3  |      | 2.2   | 0.3  |      |      |      |      |      | 1.0  |      |
| Delay (s)              |      | 8.6  |      | 9.8   | 7.1  |      |      |      |      |      | 6.5  |      |
| Level of Service       |      | A    |      | A     | A    |      |      |      |      |      | A    |      |
| Approach Delay (s)     |      | 8.6  |      |       | 7.8  |      |      | 0.0  |      |      | 6.5  |      |
| Approach LOS           |      | A    |      |       | A    |      |      | A    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 7.3   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.47  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 67.8% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

# HCM Signalized Intersection Capacity Analysis

5890: Capitol & 26th St

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|-------|------|------|------|------|
| Lane Configurations    | ↖    | ↗    |      | ↖    | ↗     |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0  | 4.0  |      | 4.0  | 4.0   |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor      | 1.00 | 1.00 |      | 1.00 | 1.00  |      |      | 1.00  |      |      | 1.00 |      |
| Frt                    | 1.00 | 1.00 |      | 1.00 | 0.99  |      |      | 0.97  |      |      | 0.99 |      |
| Flt Protected          | 0.95 | 1.00 |      | 0.95 | 1.00  |      |      | 0.99  |      |      | 0.98 |      |
| Satd. Flow (prot)      | 1770 | 1671 |      | 1770 | 1668  |      |      | 1611  |      |      | 1618 |      |
| Flt Permitted          | 0.29 | 1.00 |      | 0.48 | 1.00  |      |      | 0.97  |      |      | 0.89 |      |
| Satd. Flow (perm)      | 532  | 1671 |      | 894  | 1668  |      |      | 1572  |      |      | 1477 |      |
| Volume (vph)           | 10   | 378  | 9    | 5    | 600   | 22   | 12   | 40    | 15   | 25   | 21   | 4    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 10   | 378  | 9    | 5    | 600   | 22   | 12   | 40    | 15   | 25   | 21   | 4    |
| RTOR Reduction (vph)   | 0    | 2    | 0    | 0    | 3     | 0    | 0    | 10    | 0    | 0    | 3    | 0    |
| Lane Group Flow (vph)  | 10   | 385  | 0    | 5    | 619   | 0    | 0    | 57    | 0    | 0    | 47   | 0    |
| Parking (#/hr)         |      | 0    | 0    |      | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      |      | Perm |       |      | Perm |       |      | Perm |      |      |
| Protected Phases       |      | 4    |      |      | 8     |      |      | 2     |      |      | 6    |      |
| Permitted Phases       | 4    |      |      | 8    |       |      | 2    |       |      | 6    |      |      |
| Actuated Green, G (s)  | 27.0 | 27.0 |      | 27.0 | 27.0  |      |      | 17.0  |      |      | 17.0 |      |
| Effective Green, g (s) | 26.0 | 26.0 |      | 26.0 | 26.0  |      |      | 16.0  |      |      | 16.0 |      |
| Actuated g/C Ratio     | 0.52 | 0.52 |      | 0.52 | 0.52  |      |      | 0.32  |      |      | 0.32 |      |
| Clearance Time (s)     | 3.0  | 3.0  |      | 3.0  | 3.0   |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)     | 277  | 869  |      | 465  | 867   |      |      | 503   |      |      | 473  |      |
| v/s Ratio Prot         |      | 0.23 |      |      | c0.37 |      |      |       |      |      |      |      |
| v/s Ratio Perm         | 0.02 |      |      | 0.01 |       |      |      | c0.04 |      |      | 0.03 |      |
| v/c Ratio              | 0.04 | 0.44 |      | 0.01 | 0.71  |      |      | 0.11  |      |      | 0.10 |      |
| Uniform Delay, d1      | 5.9  | 7.5  |      | 5.8  | 9.2   |      |      | 12.0  |      |      | 11.9 |      |
| Progression Factor     | 1.00 | 1.00 |      | 1.00 | 1.00  |      |      | 1.00  |      |      | 0.65 |      |
| Incremental Delay, d2  | 0.2  | 1.6  |      | 0.0  | 5.0   |      |      | 0.5   |      |      | 0.4  |      |
| Delay (s)              | 6.1  | 9.1  |      | 5.8  | 14.2  |      |      | 12.4  |      |      | 8.2  |      |
| Level of Service       | A    | A    |      | A    | B     |      |      | B     |      |      | A    |      |
| Approach Delay (s)     |      | 9.0  |      |      | 14.1  |      |      | 12.4  |      |      | 8.2  |      |
| Approach LOS           |      | A    |      |      | B     |      |      | B     |      |      | A    |      |

## Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 12.0  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.48  |                      |     |
| Actuated Cycle Length (s)         | 50.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 45.9% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
6481: J Street & 28th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL   | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|-------|------|------|------|------|------|
| Lane Configurations    |      | ↑↑↑  |      |      |      |      |       | ↑    |      |      | ↑    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      |      |      |      |       | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor      |      | 0.91 |      |      |      |      |       | 1.00 |      |      | 1.00 |      |
| Flt                    |      | 1.00 |      |      |      |      |       | 0.92 |      |      | 1.00 |      |
| Flt Protected          |      | 1.00 |      |      |      |      |       | 1.00 |      |      | 0.99 |      |
| Satd. Flow (prot)      |      | 4889 |      |      |      |      |       | 1548 |      |      | 1655 |      |
| Flt Permitted          |      | 1.00 |      |      |      |      |       | 1.00 |      |      | 0.93 |      |
| Satd. Flow (perm)      |      | 4889 |      |      |      |      |       | 1548 |      |      | 1560 |      |
| Volume (vph)           | 34   | 1168 | 33   | 0    | 0    | 0    | 0     | 84   | 111  | 14   | 39   | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 34   | 1168 | 33   | 0    | 0    | 0    | 0     | 84   | 111  | 14   | 39   | 0    |
| RTOR Reduction (vph)   | 0    | 3    | 0    | 0    | 0    | 0    | 0     | 28   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 1232 | 0    | 0    | 0    | 0    | 0     | 167  | 0    | 0    | 53   | 0    |
| Parking (#/hr)         | 0    | 0    | 0    |      |      |      |       | 0    | 0    | 0    | 0    |      |
| Turn Type              | Perm |      |      |      |      |      | Perm  |      |      |      |      |      |
| Protected Phases       |      | 4    |      |      |      |      | 2     |      |      |      | 6    |      |
| Permitted Phases       | 4    |      |      |      |      |      |       |      | 6    |      |      |      |
| Actuated Green, G (s)  |      | 46.0 |      |      |      |      | 38.0  |      |      |      | 38.0 |      |
| Effective Green, g (s) |      | 45.0 |      |      |      |      | 37.0  |      |      |      | 37.0 |      |
| Actuated g/C Ratio     |      | 0.50 |      |      |      |      | 0.41  |      |      |      | 0.41 |      |
| Clearance Time (s)     |      | 3.0  |      |      |      |      | 3.0   |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 2445 |      |      |      |      | 636   |      |      |      | 641  |      |
| v/s Ratio Prot         |      |      |      |      |      |      | c0.11 |      |      |      |      |      |
| v/s Ratio Perm         |      | 0.25 |      |      |      |      |       |      |      |      | 0.03 |      |
| v/c Ratio              |      | 0.50 |      |      |      |      |       | 0.26 |      |      |      | 0.08 |
| Uniform Delay, d1      |      | 15.0 |      |      |      |      |       | 17.5 |      |      |      | 16.2 |
| Progression Factor     |      | 1.00 |      |      |      |      |       | 0.97 |      |      |      | 1.00 |
| Incremental Delay, d2  |      | 0.7  |      |      |      |      |       | 1.0  |      |      |      | 0.3  |
| Delay (s)              |      | 15.8 |      |      |      |      |       | 18.0 |      |      |      | 16.4 |
| Level of Service       |      | B    |      |      |      |      |       | B    |      |      |      | B    |
| Approach Delay (s)     |      | 15.8 |      |      |      | 0.0  |       | 18.0 |      |      |      | 16.4 |
| Approach LOS           |      | B    |      |      |      | A    |       | B    |      |      |      | B    |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 16.1  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.40  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 45.0% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
6482: K Street & 28th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|-------|------|------|------|------|
| Lane Configurations    |      | ↕    | ↗    |      | ↕     | ↗    |      | ↕     | ↗    |      | ↕    | ↗    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  |      | 4.0   | 4.0  |      | 4.0   | 4.0  |      | 4.0  | 4.0  |
| Lane Util. Factor      |      | 1.00 | 1.00 |      | 1.00  | 1.00 |      | 1.00  | 1.00 |      | 1.00 | 1.00 |
| Frt                    |      | 1.00 | 0.85 |      | 1.00  | 0.85 |      | 1.00  | 0.85 |      | 1.00 | 0.85 |
| Flt Protected          |      | 1.00 | 1.00 |      | 1.00  | 1.00 |      | 0.99  | 1.00 |      | 0.99 | 1.00 |
| Satd. Flow (prot)      |      | 1673 | 1425 |      | 1674  | 1425 |      | 1655  | 1425 |      | 1657 | 1425 |
| Flt Permitted          |      | 0.98 | 1.00 |      | 0.99  | 1.00 |      | 0.91  | 1.00 |      | 0.92 | 1.00 |
| Satd. Flow (perm)      |      | 1642 | 1425 |      | 1663  | 1425 |      | 1528  | 1425 |      | 1545 | 1425 |
| Volume (vph)           | 9    | 232  | 10   | 16   | 655   | 117  | 42   | 123   | 116  | 24   | 79   | 8    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 9    | 232  | 10   | 16   | 655   | 117  | 42   | 123   | 116  | 24   | 79   | 8    |
| RTOR Reduction (vph)   | 0    | 0    | 4    | 0    | 0     | 24   | 0    | 0     | 85   | 0    | 0    | 6    |
| Lane Group Flow (vph)  | 0    | 241  | 6    | 0    | 671   | 93   | 0    | 165   | 31   | 0    | 103  | 2    |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      | Perm | Perm |       | Perm | Perm |       | Perm | Perm |      | Perm |
| Protected Phases       |      | 4    |      |      | 8     |      |      | 2     |      |      | 6    |      |
| Permitted Phases       | 4    |      | 4    | 8    |       | 8    | 2    |       | 2    | 6    |      | 6    |
| Actuated Green, G (s)  |      | 59.0 | 59.0 |      | 59.0  | 59.0 |      | 25.0  | 25.0 |      | 25.0 | 25.0 |
| Effective Green, g (s) |      | 58.0 | 58.0 |      | 58.0  | 58.0 |      | 24.0  | 24.0 |      | 24.0 | 24.0 |
| Actuated g/C Ratio     |      | 0.64 | 0.64 |      | 0.64  | 0.64 |      | 0.27  | 0.27 |      | 0.27 | 0.27 |
| Clearance Time (s)     |      | 3.0  | 3.0  |      | 3.0   | 3.0  |      | 3.0   | 3.0  |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |      | 1058 | 918  |      | 1072  | 918  |      | 407   | 380  |      | 412  | 380  |
| v/s Ratio Prot         |      |      |      |      |       |      |      |       |      |      |      |      |
| v/s Ratio Perm         |      | 0.15 | 0.00 |      | c0.40 | 0.07 |      | c0.11 | 0.02 |      | 0.07 | 0.00 |
| v/c Ratio              |      | 0.23 | 0.01 |      | 0.63  | 0.10 |      | 0.41  | 0.08 |      | 0.25 | 0.01 |
| Uniform Delay, d1      |      | 6.7  | 5.7  |      | 9.5   | 6.1  |      | 27.1  | 24.7 |      | 25.9 | 24.2 |
| Progression Factor     |      | 1.00 | 1.00 |      | 0.56  | 0.54 |      | 0.89  | 0.35 |      | 0.88 | 0.82 |
| Incremental Delay, d2  |      | 0.5  | 0.0  |      | 2.1   | 0.2  |      | 2.7   | 0.4  |      | 1.4  | 0.0  |
| Delay (s)              |      | 7.2  | 5.7  |      | 7.4   | 3.5  |      | 26.9  | 9.2  |      | 24.3 | 19.9 |
| Level of Service       |      | A    | A    |      | A     | A    |      | C     | A    |      | C    | B    |
| Approach Delay (s)     |      | 7.1  |      |      | 6.9   |      |      | 19.6  |      |      | 24.0 |      |
| Approach LOS           |      | A    |      |      | A     |      |      | B     |      |      | C    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.7  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.56  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 71.6% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
6483: L Street & 28th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      |      | ↕↕   |      |      | ↕    |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      |      | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor      |      |      |      |      | 0.95 |      |      | 1.00 |      |      | 1.00 |      |
| Frt                    |      |      |      |      | 0.99 |      |      | 1.00 |      |      | 0.97 |      |
| Flt Protected          |      |      |      |      | 0.99 |      |      | 0.98 |      |      | 1.00 |      |
| Satd. Flow (prot)      |      |      |      |      | 3294 |      |      | 1648 |      |      | 1629 |      |
| Flt Permitted          |      |      |      |      | 0.99 |      |      | 0.87 |      |      | 1.00 |      |
| Satd. Flow (perm)      |      |      |      |      | 3294 |      |      | 1451 |      |      | 1629 |      |
| Volume (vph)           | 0    | 0    | 0    | 160  | 838  | 97   | 77   | 144  | 0    | 0    | 87   | 23   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 160  | 838  | 97   | 77   | 144  | 0    | 0    | 87   | 23   |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 8    | 0    | 0    | 0    | 0    | 0    | 11   | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 1087 | 0    | 0    | 221  | 0    | 0    | 99   | 0    |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Turn Type              |      |      |      |      | Perm |      |      | Perm |      |      |      |      |
| Protected Phases       |      |      |      |      | 6    |      |      | 8    |      |      | 4    |      |
| Permitted Phases       |      |      |      |      | 6    |      |      | 8    |      |      |      |      |
| Actuated Green, G (s)  |      |      |      |      | 50.0 |      |      | 34.0 |      |      | 34.0 |      |
| Effective Green, g (s) |      |      |      |      | 49.0 |      |      | 33.0 |      |      | 33.0 |      |
| Actuated g/C Ratio     |      |      |      |      | 0.54 |      |      | 0.37 |      |      | 0.37 |      |
| Clearance Time (s)     |      |      |      |      | 3.0  |      |      | 3.0  |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      |      |      |      | 1793 |      |      | 532  |      |      | 597  |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      | 0.06 |      |
| v/s Ratio Perm         |      |      |      |      | 0.33 |      |      | 0.15 |      |      |      |      |
| v/c Ratio              |      |      |      |      | 0.61 |      |      | 0.42 |      |      | 0.17 |      |
| Uniform Delay, d1      |      |      |      |      | 13.9 |      |      | 21.3 |      |      | 19.2 |      |
| Progression Factor     |      |      |      |      | 0.51 |      |      | 1.05 |      |      | 0.29 |      |
| Incremental Delay, d2  |      |      |      |      | 1.5  |      |      | 1.2  |      |      | 0.6  |      |
| Delay (s)              |      |      |      |      | 8.6  |      |      | 23.5 |      |      | 6.2  |      |
| Level of Service       |      |      |      |      | A    |      |      | C    |      |      | A    |      |
| Approach Delay (s)     |      | 0.0  |      |      | 8.6  |      |      | 23.5 |      |      | 6.2  |      |
| Approach LOS           |      | A    |      |      | A    |      |      | C    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.8  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.53  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 56.1% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

# HCM Signalized Intersection Capacity Analysis

6484: Capitol & 28th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR   | WBL  | WBT  | WBR  | NBL   | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|-------|------|------|------|-------|------|------|------|------|------|
| Lane Configurations    |      | ↕    |       | ↙    | ↘    |      |       | ↕    |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |       | 4.0  | 4.0  |      |       | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00 |       | 1.00 | 1.00 |      |       | 1.00 |      |      | 1.00 |      |
| Frt                    |      | 1.00 |       | 1.00 | 0.98 |      |       | 0.97 |      |      | 0.99 |      |
| Flt Protected          |      | 1.00 |       | 0.95 | 1.00 |      |       | 0.98 |      |      | 0.98 |      |
| Satd. Flow (prot)      |      | 1667 |       | 1770 | 1649 |      |       | 1584 |      |      | 1636 |      |
| Flt Permitted          |      | 0.85 |       | 0.35 | 1.00 |      |       | 0.75 |      |      | 0.73 |      |
| Satd. Flow (perm)      |      | 1423 |       | 652  | 1649 |      |       | 1207 |      |      | 1215 |      |
| Volume (vph)           | 20   | 381  | 10    | 77   | 439  | 53   | 271   | 177  | 150  | 83   | 142  | 13   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 20   | 381  | 10    | 77   | 439  | 53   | 271   | 177  | 150  | 83   | 142  | 13   |
| RTOR Reduction (vph)   | 0    | 1    | 0     | 0    | 5    | 0    | 0     | 13   | 0    | 0    | 2    | 0    |
| Lane Group Flow (vph)  | 0    | 410  | 0     | 77   | 487  | 0    | 0     | 585  | 0    | 0    | 236  | 0    |
| Parking (#/hr)         | 0    | 0    | 0     | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      | Perm  |      | Perm |      | Perm  |      | Perm |      | Perm |      |
| Protected Phases       | 4    |      | 8     |      | 8    |      | 2     |      | 6    |      | 6    |      |
| Permitted Phases       | 4    |      | 8     |      | 8    |      | 2     |      | 6    |      | 6    |      |
| Actuated Green, G (s)  | 32.0 |      | 32.0  |      | 32.0 |      | 52.0  |      | 52.0 |      | 52.0 |      |
| Effective Green, g (s) | 31.0 |      | 31.0  |      | 31.0 |      | 51.0  |      | 51.0 |      | 51.0 |      |
| Actuated g/C Ratio     | 0.34 |      | 0.34  |      | 0.34 |      | 0.57  |      | 0.57 |      | 0.57 |      |
| Clearance Time (s)     | 3.0  |      | 3.0   |      | 3.0  |      | 3.0   |      | 3.0  |      | 3.0  |      |
| Lane Grp Cap (vph)     | 490  |      | 225   |      | 568  |      | 684   |      | 689  |      | 689  |      |
| v/s Ratio Prot         |      |      | c0.30 |      |      |      |       |      |      |      |      |      |
| v/s Ratio Perm         | 0.29 |      | 0.12  |      |      |      | c0.48 |      |      |      | 0.19 |      |
| v/c Ratio              | 0.84 |      | 0.34  |      | 0.86 |      | 0.85  |      |      |      | 0.34 |      |
| Uniform Delay, d1      | 27.2 |      | 21.9  |      | 27.5 |      | 16.4  |      |      |      | 10.5 |      |
| Progression Factor     | 1.00 |      | 0.54  |      | 0.58 |      | 0.61  |      |      |      | 1.10 |      |
| Incremental Delay, d2  | 15.5 |      | 3.9   |      | 14.7 |      | 11.7  |      |      |      | 1.2  |      |
| Delay (s)              | 42.6 |      | 15.7  |      | 30.6 |      | 21.8  |      |      |      | 12.8 |      |
| Level of Service       | D    |      | B     |      | C    |      | C     |      |      |      | B    |      |
| Approach Delay (s)     | 42.6 |      |       |      | 28.6 |      | 21.8  |      |      |      | 12.8 |      |
| Approach LOS           | D    |      |       |      | C    |      | C     |      |      |      | B    |      |

## Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 27.5  | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 0.86  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 92.6% | ICU Level of Service | F   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
6485: N Street & 28th Street

7/11/2005



| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|---------------------------|------|------|------|------|-------|------|------|------|------|------|-------|------|
| Lane Configurations       |      | ↕↕   |      |      | ↕     |      |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)       |      | 4.0  |      |      | 4.0   |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor         |      | 0.95 |      |      | 1.00  |      |      | 1.00 |      |      | 1.00  |      |
| Fr <sub>t</sub>           |      | 1.00 |      |      | 0.88  |      |      | 0.95 |      |      | 1.00  |      |
| Fl <sub>t</sub> Protected |      | 0.99 |      |      | 1.00  |      |      | 1.00 |      |      | 0.97  |      |
| Satd. Flow (prot)         |      | 3336 |      |      | 1464  |      |      | 1601 |      |      | 1622  |      |
| Fl <sub>t</sub> Permitted |      | 0.87 |      |      | 0.94  |      |      | 1.00 |      |      | 0.73  |      |
| Satd. Flow (perm)         |      | 2907 |      |      | 1378  |      |      | 1601 |      |      | 1226  |      |
| Volume (vph)              | 42   | 346  | 7    | 48   | 0     | 486  | 0    | 101  | 51   | 105  | 50    | 0    |
| Peak-hour factor, PHF     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)           | 42   | 346  | 7    | 48   | 0     | 486  | 0    | 101  | 51   | 105  | 50    | 0    |
| RTOR Reduction (vph)      | 0    | 1    | 0    | 0    | 216   | 0    | 0    | 20   | 0    | 0    | 0     | 0    |
| Lane Group Flow (vph)     | 0    | 394  | 0    | 0    | 318   | 0    | 0    | 132  | 0    | 0    | 155   | 0    |
| Parking (#/hr)            | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Turn Type                 | Perm |      |      |      | Perm  |      |      |      |      |      | Perm  |      |
| Protected Phases          |      | 2    |      |      | 6     |      |      | 8    |      |      | 4     |      |
| Permitted Phases          | 2    |      |      | 6    |       |      |      |      | 4    |      |       |      |
| Actuated Green, G (s)     |      | 51.0 |      |      | 51.0  |      |      | 33.0 |      |      | 33.0  |      |
| Effective Green, g (s)    |      | 50.0 |      |      | 50.0  |      |      | 32.0 |      |      | 32.0  |      |
| Actuated g/C Ratio        |      | 0.56 |      |      | 0.56  |      |      | 0.36 |      |      | 0.36  |      |
| Clearance Time (s)        |      | 3.0  |      |      | 3.0   |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)        |      | 1615 |      |      | 766   |      |      | 569  |      |      | 436   |      |
| v/s Ratio Prot            |      |      |      |      |       |      |      | 0.08 |      |      |       |      |
| v/s Ratio Perm            |      | 0.14 |      |      | c0.23 |      |      |      |      |      | c0.13 |      |
| v/c Ratio                 |      | 0.24 |      |      | 0.42  |      |      | 0.23 |      |      | 0.36  |      |
| Uniform Delay, d1         |      | 10.3 |      |      | 11.6  |      |      | 20.4 |      |      | 21.4  |      |
| Progression Factor        |      | 1.00 |      |      | 4.93  |      |      | 1.00 |      |      | 1.15  |      |
| Incremental Delay, d2     |      | 0.4  |      |      | 1.2   |      |      | 1.0  |      |      | 2.1   |      |
| Delay (s)                 |      | 10.6 |      |      | 58.1  |      |      | 21.3 |      |      | 26.7  |      |
| Level of Service          |      | B    |      |      | E     |      |      | C    |      |      | C     |      |
| Approach Delay (s)        |      | 10.6 |      |      | 58.1  |      |      | 21.3 |      |      | 26.7  |      |
| Approach LOS              |      | B    |      |      | E     |      |      | C    |      |      | C     |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 34.5  | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 0.39  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 73.9% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
6511: K Street & Alhambra

6/1/2005



| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|---------------------------|------|------|------|------|-------|------|------|------|------|------|-------|------|
| Lane Configurations       |      | ↕    | ↗    |      | ↕     |      |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)       |      | 4.0  | 4.0  |      | 4.0   |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor         |      | 1.00 | 1.00 |      | 1.00  |      |      | 0.95 |      |      | 0.95  |      |
| Fr <sub>t</sub>           |      | 1.00 | 0.85 |      | 0.99  |      |      | 0.99 |      |      | 0.94  |      |
| Fl <sub>t</sub> Protected |      | 0.97 | 1.00 |      | 0.99  |      |      | 0.99 |      |      | 1.00  |      |
| Satd. Flow (prot)         |      | 1812 | 1583 |      | 1822  |      |      | 3454 |      |      | 3340  |      |
| Fl <sub>t</sub> Permitted |      | 0.84 | 1.00 |      | 0.93  |      |      | 0.55 |      |      | 0.95  |      |
| Satd. Flow (perm)         |      | 1563 | 1583 |      | 1717  |      |      | 1928 |      |      | 3188  |      |
| Volume (vph)              | 44   | 35   | 112  | 25   | 61    | 6    | 131  | 320  | 36   | 3    | 706   | 425  |
| Peak-hour factor, PHF     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)           | 44   | 35   | 112  | 25   | 61    | 6    | 131  | 320  | 36   | 3    | 706   | 425  |
| RTOR Reduction (vph)      | 0    | 0    | 75   | 0    | 3     | 0    | 0    | 7    | 0    | 0    | 99    | 0    |
| Lane Group Flow (vph)     | 0    | 79   | 37   | 0    | 89    | 0    | 0    | 480  | 0    | 0    | 1035  | 0    |
| Turn Type                 | Perm |      | Perm | Perm |       |      | Perm |      |      | Perm |       |      |
| Protected Phases          |      | 4    |      |      | 8     |      |      | 2    |      |      |       | 6    |
| Permitted Phases          | 4    |      | 4    | 8    |       |      | 2    |      |      | 6    |       |      |
| Actuated Green, G (s)     |      | 31.0 | 31.0 |      | 31.0  |      |      | 53.0 |      |      | 53.0  |      |
| Effective Green, g (s)    |      | 30.0 | 30.0 |      | 30.0  |      |      | 52.0 |      |      | 52.0  |      |
| Actuated g/C Ratio        |      | 0.33 | 0.33 |      | 0.33  |      |      | 0.58 |      |      | 0.58  |      |
| Clearance Time (s)        |      | 3.0  | 3.0  |      | 3.0   |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)        |      | 521  | 528  |      | 572   |      |      | 1114 |      |      | 1842  |      |
| v/s Ratio Prot            |      |      |      |      |       |      |      |      |      |      |       |      |
| v/s Ratio Perm            |      | 0.05 | 0.02 |      | c0.05 |      |      | 0.25 |      |      | c0.32 |      |
| v/c Ratio                 |      | 0.15 | 0.07 |      | 0.16  |      |      | 0.43 |      |      | 0.56  |      |
| Uniform Delay, d1         |      | 21.1 | 20.5 |      | 21.1  |      |      | 10.7 |      |      | 11.9  |      |
| Progression Factor        |      | 1.05 | 1.76 |      | 1.00  |      |      | 1.01 |      |      | 0.51  |      |
| Incremental Delay, d2     |      | 0.6  | 0.3  |      | 0.6   |      |      | 0.8  |      |      | 0.9   |      |
| Delay (s)                 |      | 22.8 | 36.2 |      | 21.7  |      |      | 11.6 |      |      | 6.9   |      |
| Level of Service          |      | C    | D    |      | C     |      |      | B    |      |      | A     |      |
| Approach Delay (s)        |      | 30.7 |      |      | 21.7  |      |      | 11.6 |      |      | 6.9   |      |
| Approach LOS              |      | C    |      |      | C     |      |      | B    |      |      | A     |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.2  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.41  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 68.6% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 9622: K Street & 30th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    | ↖    | ↗    |      |      | ↕     | ↗    |      | ↕↖↗  |      |      |      |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0  | 4.0  |      |      | 4.0   | 4.0  |      | 4.0  |      |      |      |      |
| Lane Util. Factor      | 1.00 | 1.00 |      |      | 1.00  | 1.00 |      | 0.91 |      |      |      |      |
| Fr <sub>t</sub>        | 1.00 | 1.00 |      |      | 1.00  | 0.85 |      | 0.99 |      |      |      |      |
| Flt Protected          | 0.95 | 1.00 |      |      | 1.00  | 1.00 |      | 0.99 |      |      |      |      |
| Satd. Flow (prot)      | 1770 | 1863 |      |      | 1863  | 1583 |      | 4939 |      |      |      |      |
| Flt Permitted          | 0.34 | 1.00 |      |      | 1.00  | 1.00 |      | 0.99 |      |      |      |      |
| Satd. Flow (perm)      | 629  | 1863 |      |      | 1863  | 1583 |      | 4939 |      |      |      |      |
| Volume (vph)           | 65   | 142  | 0    | 0    | 527   | 43   | 294  | 583  | 91   | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 65   | 142  | 0    | 0    | 527   | 43   | 294  | 583  | 91   | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 0     | 16   | 0    | 14   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 65   | 142  | 0    | 0    | 527   | 27   | 0    | 954  | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      |      |      | Perm  |      | Perm |      |      |      |      |      |
| Protected Phases       |      | 4    |      |      | 8     |      |      | 2    |      |      |      |      |
| Permitted Phases       | 4    |      |      |      |       | 8    | 2    |      |      |      |      |      |
| Actuated Green, G (s)  | 49.0 | 49.0 |      |      | 49.0  | 49.0 |      | 35.0 |      |      |      |      |
| Effective Green, g (s) | 48.0 | 48.0 |      |      | 48.0  | 48.0 |      | 34.0 |      |      |      |      |
| Actuated g/C Ratio     | 0.53 | 0.53 |      |      | 0.53  | 0.53 |      | 0.38 |      |      |      |      |
| Clearance Time (s)     | 3.0  | 3.0  |      |      | 3.0   | 3.0  |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)     | 335  | 994  |      |      | 994   | 844  |      | 1866 |      |      |      |      |
| v/s Ratio Prot         |      | 0.08 |      |      | c0.28 |      |      |      |      |      |      |      |
| v/s Ratio Perm         | 0.10 |      |      |      |       | 0.02 |      | 0.19 |      |      |      |      |
| v/c Ratio              | 0.19 | 0.14 |      |      | 0.53  | 0.03 |      | 0.51 |      |      |      |      |
| Uniform Delay, d1      | 10.9 | 10.6 |      |      | 13.7  | 10.0 |      | 21.6 |      |      |      |      |
| Progression Factor     | 0.81 | 0.82 |      |      | 1.07  | 1.08 |      | 0.35 |      |      |      |      |
| Incremental Delay, d2  | 1.2  | 0.3  |      |      | 1.8   | 0.1  |      | 0.9  |      |      |      |      |
| Delay (s)              | 10.1 | 9.0  |      |      | 16.4  | 10.8 |      | 8.5  |      |      |      |      |
| Level of Service       | B    | A    |      |      | B     | B    |      | A    |      |      |      |      |
| Approach Delay (s)     |      | 9.4  |      |      | 15.9  |      |      | 8.5  |      |      | 0.0  |      |
| Approach LOS           |      | A    |      |      | B     |      |      | A    |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.0  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.52  |                      |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 65.3% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

CUMULATIVE PLUS SUTTER PROGRAM PLUS TRINITY PROJECT  
WITH SMART PLAN

PM Peak Hour

Signalized Intersections

(pm9)



HCM Signalized Intersection Capacity Analysis  
 2004: L Street & 21th Street

6/1/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT  | WBR  | NBL  | NBT                  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|-------|------|------|------|------|----------------------|------|------|------|------|
| Lane Configurations               |      |      |       |      | ↑↓   |      |      | ↑↑↑                  |      |      |      |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      |      |       |      | 4.0  |      |      | 4.0                  |      |      |      |      |
| Lane Util. Factor                 |      |      |       |      | 0.95 |      |      | 0.91                 |      |      |      |      |
| Frt                               |      |      |       |      | 0.98 |      |      | 1.00                 |      |      |      |      |
| Flt Protected                     |      |      |       |      | 1.00 |      |      | 0.99                 |      |      |      |      |
| Satd. Flow (prot)                 |      |      |       |      | 3293 |      |      | 4888                 |      |      |      |      |
| Flt Permitted                     |      |      |       |      | 1.00 |      |      | 0.99                 |      |      |      |      |
| Satd. Flow (perm)                 |      |      |       |      | 3293 |      |      | 4888                 |      |      |      |      |
| Volume (vph)                      | 0    | 0    | 0     | 0    | 753  | 119  | 205  | 1591                 | 0    | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 0    | 753  | 119  | 205  | 1591                 | 0    | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 0    | 7    | 0    | 0    | 27                   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 0    | 865  | 0    | 0    | 1769                 | 0    | 0    | 0    | 0    |
| Parking (#/hr)                    | 0    | 0    |       |      | 0    | 0    | 0    | 0                    | 0    |      |      |      |
| Turn Type                         |      |      |       |      |      |      |      | Perm                 |      |      |      |      |
| Protected Phases                  |      |      |       |      | 6    |      |      | 8                    |      |      |      |      |
| Permitted Phases                  |      |      |       |      |      |      | 8    |                      |      |      |      |      |
| Actuated Green, G (s)             |      |      |       |      | 24.0 |      |      | 30.0                 |      |      |      |      |
| Effective Green, g (s)            |      |      |       |      | 23.0 |      |      | 29.0                 |      |      |      |      |
| Actuated g/C Ratio                |      |      |       |      | 0.38 |      |      | 0.48                 |      |      |      |      |
| Clearance Time (s)                |      |      |       |      | 3.0  |      |      | 3.0                  |      |      |      |      |
| Lane Grp Cap (vph)                |      |      |       |      | 1262 |      |      | 2363                 |      |      |      |      |
| v/s Ratio Prot                    |      |      |       |      | 0.26 |      |      |                      |      |      |      |      |
| v/s Ratio Perm                    |      |      |       |      |      |      |      | 0.36                 |      |      |      |      |
| v/c Ratio                         |      |      |       |      | 0.69 |      |      | 0.75                 |      |      |      |      |
| Uniform Delay, d1                 |      |      |       |      | 15.5 |      |      | 12.5                 |      |      |      |      |
| Progression Factor                |      |      |       |      | 0.47 |      |      | 1.00                 |      |      |      |      |
| Incremental Delay, d2             |      |      |       |      | 2.8  |      |      | 2.2                  |      |      |      |      |
| Delay (s)                         |      |      |       |      | 10.0 |      |      | 14.8                 |      |      |      |      |
| Level of Service                  |      |      |       |      | B    |      |      | B                    |      |      |      |      |
| Approach Delay (s)                |      | 0.0  |       |      | 10.0 |      |      | 14.8                 |      |      | 0.0  |      |
| Approach LOS                      |      | A    |       |      | B    |      |      | B                    |      |      | A    |      |
| <b>Intersection Summary</b>       |      |      |       |      |      |      |      |                      |      |      |      |      |
| HCM Average Control Delay         |      |      | 13.2  |      |      |      |      | HCM Level of Service |      |      | B    |      |
| HCM Volume to Capacity ratio      |      |      | 0.72  |      |      |      |      |                      |      |      |      |      |
| Actuated Cycle Length (s)         |      |      | 60.0  |      |      |      |      | Sum of lost time (s) |      |      | 8.0  |      |
| Intersection Capacity Utilization |      |      | 66.2% |      |      |      |      | ICU Level of Service |      |      | C    |      |
| Analysis Period (min)             |      |      | 15    |      |      |      |      |                      |      |      |      |      |
| c Critical Lane Group             |      |      |       |      |      |      |      |                      |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
 2012: J Street & 21th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations    |      | ↑↑↑  |      |      |      |      |      | ↑↑↑   |      |      |      |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      |      |      |      |      | 4.0   |      |      |      |      |
| Lane Util. Factor      |      | 0.91 |      |      |      |      |      | 0.91  |      |      |      |      |
| Frt                    |      | 1.00 |      |      |      |      |      | 0.97  |      |      |      |      |
| Flt Protected          |      | 1.00 |      |      |      |      |      | 1.00  |      |      |      |      |
| Satd. Flow (prot)      |      | 4906 |      |      |      |      |      | 4769  |      |      |      |      |
| Flt Permitted          |      | 1.00 |      |      |      |      |      | 1.00  |      |      |      |      |
| Satd. Flow (perm)      |      | 4906 |      |      |      |      |      | 4769  |      |      |      |      |
| Volume (vph)           | 80   | 1909 | 0    | 0    | 0    | 0    | 0    | 1429  | 355  | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 80   | 1909 | 0    | 0    | 0    | 0    | 0    | 1429  | 355  | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0    | 6    | 0    | 0    | 0    | 0    | 0    | 2     | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 1984 | 0    | 0    | 0    | 0    | 0    | 1782  | 0    | 0    | 0    | 0    |
| Parking (#/hr)         | 0    | 0    |      |      |      |      |      | 0     | 0    |      |      |      |
| Turn Type              | Perm |      |      |      |      |      |      |       |      |      |      |      |
| Protected Phases       |      | 2    |      |      |      |      |      | 8     |      |      |      |      |
| Permitted Phases       | 2    |      |      |      |      |      |      |       |      |      |      |      |
| Actuated Green, G (s)  |      | 28.0 |      |      |      |      |      | 26.0  |      |      |      |      |
| Effective Green, g (s) |      | 27.0 |      |      |      |      |      | 25.0  |      |      |      |      |
| Actuated g/C Ratio     |      | 0.45 |      |      |      |      |      | 0.42  |      |      |      |      |
| Clearance Time (s)     |      | 3.0  |      |      |      |      |      | 3.0   |      |      |      |      |
| Lane Grp Cap (vph)     |      | 2208 |      |      |      |      |      | 1987  |      |      |      |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      | c0.37 |      |      |      |      |
| v/s Ratio Perm         |      | 0.40 |      |      |      |      |      |       |      |      |      |      |
| v/c Ratio              |      | 0.90 |      |      |      |      |      | 0.90  |      |      |      |      |
| Uniform Delay, d1      |      | 15.2 |      |      |      |      |      | 16.3  |      |      |      |      |
| Progression Factor     |      | 0.60 |      |      |      |      |      | 0.39  |      |      |      |      |
| Incremental Delay, d2  |      | 4.4  |      |      |      |      |      | 4.9   |      |      |      |      |
| Delay (s)              |      | 13.5 |      |      |      |      |      | 11.2  |      |      |      |      |
| Level of Service       |      | B    |      |      |      |      |      | B     |      |      |      |      |
| Approach Delay (s)     |      | 13.5 |      |      | 0.0  |      |      | 11.2  |      |      | 0.0  |      |
| Approach LOS           |      | B    |      |      | A    |      |      | B     |      |      | A    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 12.4  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.90  |                      |     |
| Actuated Cycle Length (s)         | 60.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 80.7% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

# HCM Signalized Intersection Capacity Analysis

2074: J Street & 19th Street

6/1/2005



| Movement                          | EBL                 | EBT   | EBR   | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT                  | SBR  |
|-----------------------------------|---------------------|-------|-------|------|------|------|------|------|------|------|----------------------|------|
| Lane Configurations               |                     | ↑↑↑   |       |      |      |      |      |      |      |      | ↑↑↑                  |      |
| Ideal Flow (vphpl)                | 1900                | 1900  | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900                 | 1900 |
| Total Lost time (s)               |                     | 4.0   |       |      |      |      |      |      |      |      | 4.0                  |      |
| Lane Util. Factor                 |                     | 0.91  |       |      |      |      |      |      |      |      | 0.91                 |      |
| Frt                               |                     | 0.96  |       |      |      |      |      |      |      |      | 1.00                 |      |
| Flt Protected                     |                     | 1.00  |       |      |      |      |      |      |      |      | 0.99                 |      |
| Satd. Flow (prot)                 |                     | 4741  |       |      |      |      |      |      |      |      | 4844                 |      |
| Flt Permitted                     |                     | 1.00  |       |      |      |      |      |      |      |      | 0.99                 |      |
| Satd. Flow (perm)                 |                     | 4741  |       |      |      |      |      |      |      |      | 4844                 |      |
| Volume (vph)                      | 0                   | 1731  | 538   | 0    | 0    | 0    | 0    | 0    | 0    | 195  | 460                  | 0    |
| Peak-hour factor, PHF             | 1.00                | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00                 | 1.00 |
| Adj. Flow (vph)                   | 0                   | 1731  | 538   | 0    | 0    | 0    | 0    | 0    | 0    | 195  | 460                  | 0    |
| RTOR Reduction (vph)              | 0                   | 44    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 16                   | 0    |
| Lane Group Flow (vph)             | 0                   | 2225  | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 639                  | 0    |
| Parking (#/hr)                    |                     | 0     | 0     |      |      |      |      |      |      | 0    | 0                    |      |
| Turn Type                         |                     |       |       |      |      |      |      |      |      | Perm |                      |      |
| Protected Phases                  |                     | 2     |       |      |      |      |      |      |      |      | 4                    |      |
| Permitted Phases                  |                     |       |       |      |      |      |      |      |      | 4    |                      |      |
| Actuated Green, G (s)             |                     | 37.0  |       |      |      |      |      |      |      |      | 17.0                 |      |
| Effective Green, g (s)            |                     | 36.0  |       |      |      |      |      |      |      |      | 16.0                 |      |
| Actuated g/C Ratio                |                     | 0.60  |       |      |      |      |      |      |      |      | 0.27                 |      |
| Clearance Time (s)                |                     | 3.0   |       |      |      |      |      |      |      |      | 3.0                  |      |
| Lane Grp Cap (vph)                |                     | 2845  |       |      |      |      |      |      |      |      | 1292                 |      |
| v/s Ratio Prot                    |                     | c0.47 |       |      |      |      |      |      |      |      |                      |      |
| v/s Ratio Perm                    |                     |       |       |      |      |      |      |      |      |      | 0.13                 |      |
| v/c Ratio                         |                     | 0.78  |       |      |      |      |      |      |      |      | 0.49                 |      |
| Uniform Delay, d1                 |                     | 9.0   |       |      |      |      |      |      |      |      | 18.6                 |      |
| Progression Factor                |                     | 1.00  |       |      |      |      |      |      |      |      | 1.00                 |      |
| Incremental Delay, d2             |                     | 2.2   |       |      |      |      |      |      |      |      | 1.4                  |      |
| Delay (s)                         |                     | 11.3  |       |      |      |      |      |      |      |      | 19.9                 |      |
| Level of Service                  |                     | B     |       |      |      |      |      |      |      |      | B                    |      |
| Approach Delay (s)                |                     | 11.3  |       |      | 0.0  |      |      | 0.0  |      |      | 19.9                 |      |
| Approach LOS                      |                     | B     |       |      | A    |      |      | A    |      |      | B                    |      |
| <b>Intersection Summary</b>       |                     |       |       |      |      |      |      |      |      |      |                      |      |
| HCM Average Control Delay         |                     |       | 13.2  |      |      |      |      |      |      |      | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      |                     |       | 0.69  |      |      |      |      |      |      |      |                      |      |
| Actuated Cycle Length (s)         |                     |       | 60.0  |      |      |      |      |      |      |      | Sum of lost time (s) | 8.0  |
| Intersection Capacity Utilization |                     |       | 65.0% |      |      |      |      |      |      |      | ICU Level of Service | C    |
| Analysis Period (min)             |                     |       | 15    |      |      |      |      |      |      |      |                      |      |
| c                                 | Critical Lane Group |       |       |      |      |      |      |      |      |      |                      |      |

HCM Signalized Intersection Capacity Analysis  
 2088: L Street & 29th Street

6/1/2005



| Movement                          | EBL                 | EBT  | EBR   | WBL   | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR                  |     |
|-----------------------------------|---------------------|------|-------|-------|------|------|------|------|------|------|-------|----------------------|-----|
| Lane Configurations               |                     |      |       | ↙     | ↑↑   |      |      |      |      |      | ↑↑↑   | ↗                    |     |
| Ideal Flow (vphpl)                | 1900                | 1900 | 1900  | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900                 |     |
| Total Lost time (s)               |                     |      |       | 4.0   | 4.0  |      |      |      |      |      | 4.0   | 4.0                  |     |
| Lane Util. Factor                 |                     |      |       | 1.00  | 0.95 |      |      |      |      |      | 0.86  | 0.86                 |     |
| Fr <sub>t</sub>                   |                     |      |       | 1.00  | 1.00 |      |      |      |      |      | 1.00  | 0.85                 |     |
| Fl <sub>t</sub> Protected         |                     |      |       | 0.95  | 1.00 |      |      |      |      |      | 1.00  | 1.00                 |     |
| Satd. Flow (prot)                 |                     |      |       | 1770  | 3539 |      |      |      |      |      | 4646  | 1226                 |     |
| Fl <sub>t</sub> Permitted         |                     |      |       | 0.95  | 1.00 |      |      |      |      |      | 1.00  | 1.00                 |     |
| Satd. Flow (perm)                 |                     |      |       | 1770  | 3539 |      |      |      |      |      | 4646  | 1226                 |     |
| Volume (vph)                      | 0                   | 0    | 0     | 253   | 459  | 0    | 0    | 0    | 0    | 0    | 1493  | 175                  |     |
| Peak-hour factor, PHF             | 1.00                | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00                 |     |
| Adj. Flow (vph)                   | 0                   | 0    | 0     | 253   | 459  | 0    | 0    | 0    | 0    | 0    | 1493  | 175                  |     |
| RTOR Reduction (vph)              | 0                   | 0    | 0     | 14    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 83                   |     |
| Lane Group Flow (vph)             | 0                   | 0    | 0     | 239   | 459  | 0    | 0    | 0    | 0    | 0    | 1493  | 92                   |     |
| Parking (#/hr)                    |                     |      | 0     |       |      |      |      |      |      |      | 0     | 0                    |     |
| Turn Type                         |                     |      |       | Perm  |      |      |      |      |      |      |       | Perm                 |     |
| Protected Phases                  |                     |      |       |       | 6    |      |      |      |      |      |       | 4                    |     |
| Permitted Phases                  |                     |      |       | 6     |      |      |      |      |      |      |       | 4                    |     |
| Actuated Green, G (s)             |                     |      |       | 31.0  | 31.0 |      |      |      |      |      | 43.0  | 43.0                 |     |
| Effective Green, g (s)            |                     |      |       | 30.0  | 30.0 |      |      |      |      |      | 42.0  | 42.0                 |     |
| Actuated g/C Ratio                |                     |      |       | 0.38  | 0.38 |      |      |      |      |      | 0.52  | 0.52                 |     |
| Clearance Time (s)                |                     |      |       | 3.0   | 3.0  |      |      |      |      |      | 3.0   | 3.0                  |     |
| Lane Grp Cap (vph)                |                     |      |       | 664   | 1327 |      |      |      |      |      | 2439  | 644                  |     |
| v/s Ratio Prot                    |                     |      |       |       | 0.13 |      |      |      |      |      | c0.32 |                      |     |
| v/s Ratio Perm                    |                     |      |       | c0.13 |      |      |      |      |      |      |       | 0.07                 |     |
| v/c Ratio                         |                     |      |       | 0.36  | 0.35 |      |      |      |      |      | 0.61  | 0.14                 |     |
| Uniform Delay, d1                 |                     |      |       | 18.1  | 18.0 |      |      |      |      |      | 13.3  | 9.8                  |     |
| Progression Factor                |                     |      |       | 0.54  | 0.58 |      |      |      |      |      | 0.61  | 0.00                 |     |
| Incremental Delay, d2             |                     |      |       | 1.5   | 0.7  |      |      |      |      |      | 0.9   | 0.3                  |     |
| Delay (s)                         |                     |      |       | 11.3  | 11.1 |      |      |      |      |      | 9.0   | 0.3                  |     |
| Level of Service                  |                     |      |       | B     | B    |      |      |      |      |      | A     | A                    |     |
| Approach Delay (s)                |                     | 0.0  |       |       | 11.2 |      |      | 0.0  |      |      | 8.1   |                      |     |
| Approach LOS                      |                     | A    |       |       | B    |      |      | A    |      |      | A     |                      |     |
| <b>Intersection Summary</b>       |                     |      |       |       |      |      |      |      |      |      |       |                      |     |
| HCM Average Control Delay         |                     |      | 9.0   |       |      |      |      |      |      |      |       | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      |                     |      | 0.51  |       |      |      |      |      |      |      |       |                      |     |
| Actuated Cycle Length (s)         |                     |      | 80.0  |       |      |      |      |      |      |      |       | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization |                     |      | 50.8% |       |      |      |      |      |      |      |       | ICU Level of Service | A   |
| Analysis Period (min)             |                     |      | 15    |       |      |      |      |      |      |      |       |                      |     |
| c                                 | Critical Lane Group |      |       |       |      |      |      |      |      |      |       |                      |     |



# HCM Signalized Intersection Capacity Analysis

2239: L Street & Alhambra

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      |      | ↕    |      |      | ↕    |      |      | ↕    | ↕    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      |      | 4.0  |      |      | 4.0  | 4.0  |
| Lane Util. Factor      |      |      |      |      | 1.00 |      |      | 1.00 |      |      | 1.00 | 1.00 |
| Frt                    |      |      |      |      | 0.98 |      |      | 0.98 |      |      | 1.00 | 0.85 |
| Flt Protected          |      |      |      |      | 0.99 |      |      | 0.99 |      |      | 1.00 | 1.00 |
| Satd. Flow (prot)      |      |      |      |      | 1624 |      |      | 1622 |      |      | 1858 | 1425 |
| Flt Permitted          |      |      |      |      | 0.99 |      |      | 0.67 |      |      | 0.94 | 1.00 |
| Satd. Flow (perm)      |      |      |      |      | 1624 |      |      | 1093 |      |      | 1744 | 1425 |
| Volume (vph)           | 0    | 0    | 0    | 52   | 214  | 56   | 134  | 530  | 147  | 42   | 741  | 302  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 52   | 214  | 56   | 134  | 530  | 147  | 42   | 741  | 302  |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 10   | 0    | 0    | 10   | 0    | 0    | 0    | 81   |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 312  | 0    | 0    | 801  | 0    | 0    | 783  | 221  |
| Parking (#/hr)         |      |      |      | 0    | 0    | 0    | 0    | 0    | 0    |      |      | 0    |
| Turn Type              |      |      |      |      | Perm |      |      | Perm |      |      | Perm | Perm |
| Protected Phases       |      |      |      |      | 6    |      |      | 8    |      |      | 4    | 4    |
| Permitted Phases       |      |      |      |      | 6    |      |      | 8    |      |      | 4    | 4    |
| Actuated Green, G (s)  |      |      |      |      | 17.0 |      |      | 57.0 |      |      | 57.0 | 57.0 |
| Effective Green, g (s) |      |      |      |      | 16.0 |      |      | 56.0 |      |      | 56.0 | 56.0 |
| Actuated g/C Ratio     |      |      |      |      | 0.20 |      |      | 0.70 |      |      | 0.70 | 0.70 |
| Clearance Time (s)     |      |      |      |      | 3.0  |      |      | 3.0  |      |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |      |      |      |      | 325  |      |      | 765  |      |      | 1221 | 998  |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      |      |      | 0.19 |      |      | 0.73 |      |      | 0.45 | 0.15 |
| v/c Ratio              |      |      |      |      | 0.96 |      |      | 1.05 |      |      | 0.64 | 0.22 |
| Uniform Delay, d1      |      |      |      |      | 31.7 |      |      | 12.0 |      |      | 6.5  | 4.3  |
| Progression Factor     |      |      |      |      | 1.00 |      |      | 0.53 |      |      | 0.64 | 0.07 |
| Incremental Delay, d2  |      |      |      |      | 41.0 |      |      | 37.4 |      |      | 2.2  | 0.4  |
| Delay (s)              |      |      |      |      | 72.7 |      |      | 43.7 |      |      | 6.4  | 0.7  |
| Level of Service       |      |      |      |      | E    |      |      | D    |      |      | A    | A    |
| Approach Delay (s)     |      | 0.0  |      |      | 72.7 |      |      | 43.7 |      |      | 4.8  |      |
| Approach LOS           |      | A    |      |      | E    |      |      | D    |      |      | A    |      |

| Intersection Summary              |        |                      |     |
|-----------------------------------|--------|----------------------|-----|
| HCM Average Control Delay         | 28.9   | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 1.03   |                      |     |
| Actuated Cycle Length (s)         | 80.0   | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 113.1% | ICU Level of Service | H   |
| Analysis Period (min)             | 15     |                      |     |
| c Critical Lane Group             |        |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3426: L Street & 19th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations    |      |      |      |      | ↔↔   |      |      |      |      |      | ↔↔↔   |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      |      |      |      |      | 4.0   |      |
| Lane Util. Factor      |      |      |      |      | 0.95 |      |      |      |      |      | 0.91  |      |
| Frt                    |      |      |      |      | 1.00 |      |      |      |      |      | 1.00  |      |
| Flt Protected          |      |      |      |      | 0.99 |      |      |      |      |      | 1.00  |      |
| Satd. Flow (prot)      |      |      |      |      | 3333 |      |      |      |      |      | 4908  |      |
| Flt Permitted          |      |      |      |      | 0.99 |      |      |      |      |      | 1.00  |      |
| Satd. Flow (perm)      |      |      |      |      | 3333 |      |      |      |      |      | 4908  |      |
| Volume (vph)           | 0    | 0    | 0    | 174  | 818  | 0    | 0    | 0    | 0    | 0    | 1190  | 13   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 174  | 818  | 0    | 0    | 0    | 0    | 0    | 1190  | 13   |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 8    | 0    | 0    | 0    | 0    | 0    | 2     | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 984  | 0    | 0    | 0    | 0    | 0    | 1201  | 0    |
| Parking (#/hr)         |      | 0    | 0    | 0    | 0    |      |      |      |      | 0    | 0     | 0    |
| Turn Type              |      |      |      | Perm |      |      |      |      |      |      |       |      |
| Protected Phases       |      |      |      |      | 6    |      |      |      |      |      | 4     |      |
| Permitted Phases       |      |      |      | 6    |      |      |      |      |      |      |       |      |
| Actuated Green, G (s)  |      |      |      |      | 30.0 |      |      |      |      |      | 24.0  |      |
| Effective Green, g (s) |      |      |      |      | 29.0 |      |      |      |      |      | 23.0  |      |
| Actuated g/C Ratio     |      |      |      |      | 0.48 |      |      |      |      |      | 0.38  |      |
| Clearance Time (s)     |      |      |      |      | 3.0  |      |      |      |      |      | 3.0   |      |
| Lane Grp Cap (vph)     |      |      |      |      | 1611 |      |      |      |      |      | 1881  |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      | c0.24 |      |
| v/s Ratio Perm         |      |      |      |      | 0.30 |      |      |      |      |      |       |      |
| v/c Ratio              |      |      |      |      | 0.61 |      |      |      |      |      | 0.64  |      |
| Uniform Delay, d1      |      |      |      |      | 11.4 |      |      |      |      |      | 15.1  |      |
| Progression Factor     |      |      |      |      | 0.37 |      |      |      |      |      | 0.75  |      |
| Incremental Delay, d2  |      |      |      |      | 1.3  |      |      |      |      |      | 1.4   |      |
| Delay (s)              |      |      |      |      | 5.5  |      |      |      |      |      | 12.8  |      |
| Level of Service       |      |      |      |      | A    |      |      |      |      |      | B     |      |
| Approach Delay (s)     |      | 0.0  |      |      | 5.5  |      |      | 0.0  |      |      | 12.8  |      |
| Approach LOS           |      | A    |      |      | A    |      |      | A    |      |      | B     |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 9.5   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.62  |                      |     |
| Actuated Cycle Length (s)         | 60.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 57.6% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3427: L Street & 26th St

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      |      | ↔    |      |      | ↑    |      |      | ↓    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      |      | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor      |      |      |      |      | 0.95 |      |      | 1.00 |      |      | 1.00 |      |
| Frt                    |      |      |      |      | 0.99 |      |      | 1.00 |      |      | 0.96 |      |
| Flt Protected          |      |      |      |      | 1.00 |      |      | 0.98 |      |      | 1.00 |      |
| Satd. Flow (prot)      |      |      |      |      | 3330 |      |      | 1642 |      |      | 1601 |      |
| Flt Permitted          |      |      |      |      | 1.00 |      |      | 0.89 |      |      | 1.00 |      |
| Satd. Flow (perm)      |      |      |      |      | 3330 |      |      | 1487 |      |      | 1601 |      |
| Volume (vph)           | 0    | 0    | 0    | 14   | 741  | 47   | 38   | 53   | 0    | 0    | 66   | 33   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 14   | 741  | 47   | 38   | 53   | 0    | 0    | 66   | 33   |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 8    | 0    | 0    | 0    | 0    | 0    | 20   | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 794  | 0    | 0    | 91   | 0    | 0    | 79   | 0    |
| Parking (#/hr)         |      |      |      | 0    | 0    | 0    | 0    | 0    |      |      | 0    | 0    |
| Turn Type              |      |      |      |      | Perm |      |      | Perm |      |      |      |      |
| Protected Phases       |      |      |      |      | 8    |      |      | 2    |      |      | 6    |      |
| Permitted Phases       |      |      |      | 8    |      |      | 2    |      |      |      |      |      |
| Actuated Green, G (s)  |      |      |      |      | 30.0 |      |      | 24.0 |      |      | 24.0 |      |
| Effective Green, g (s) |      |      |      |      | 29.0 |      |      | 23.0 |      |      | 23.0 |      |
| Actuated g/C Ratio     |      |      |      |      | 0.48 |      |      | 0.38 |      |      | 0.38 |      |
| Clearance Time (s)     |      |      |      |      | 3.0  |      |      | 3.0  |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      |      |      |      | 1610 |      |      | 570  |      |      | 614  |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      | 0.05 |      |
| v/s Ratio Perm         |      |      |      |      | 0.24 |      |      | 0.06 |      |      |      |      |
| v/c Ratio              |      |      |      |      | 0.49 |      |      | 0.16 |      |      | 0.13 |      |
| Uniform Delay, d1      |      |      |      |      | 10.5 |      |      | 12.2 |      |      | 12.0 |      |
| Progression Factor     |      |      |      |      | 1.00 |      |      | 0.66 |      |      | 1.00 |      |
| Incremental Delay, d2  |      |      |      |      | 1.1  |      |      | 0.6  |      |      | 0.4  |      |
| Delay (s)              |      |      |      |      | 11.6 |      |      | 8.5  |      |      | 12.4 |      |
| Level of Service       |      |      |      |      | B    |      |      | A    |      |      | B    |      |
| Approach Delay (s)     |      | 0.0  |      |      | 11.6 |      |      | 8.5  |      |      | 12.4 |      |
| Approach LOS           |      | A    |      |      | B    |      |      | A    |      |      | B    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.4  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.35  |                      |     |
| Actuated Cycle Length (s)         | 60.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 40.6% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c. Critical Lane Group            |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3428: J Street & 29th St off ramp

6/1/2005



| Movement               | EBT   | EBR  | SBL   | SBT   | SWL2  | SWL   |
|------------------------|-------|------|-------|-------|-------|-------|
| Lane Configurations    | ↑↑↑   |      |       | ↑↑↑   |       | ↘↘    |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900  | 1900  | 1900  | 1900  |
| Total Lost time (s)    | 4.0   |      |       | 4.0   |       | 4.0   |
| Lane Util. Factor      | 0.91  |      |       | 0.91  |       | 0.97  |
| Frt                    | 0.95  |      |       | 1.00  |       | 1.00  |
| Flt Protected          | 1.00  |      |       | 0.99  |       | 0.95  |
| Satd. Flow (prot)      | 4690  |      |       | 4874  |       | 3433  |
| Flt Permitted          | 1.00  |      |       | 0.99  |       | 0.95  |
| Satd. Flow (perm)      | 4690  |      |       | 4874  |       | 3433  |
| Volume (vph)           | 1392  | 614  | 83    | 404   | 104   | 423   |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)        | 1392  | 614  | 83    | 404   | 104   | 423   |
| RTOR Reduction (vph)   | 38    | 0    | 0     | 0     | 0     | 28    |
| Lane Group Flow (vph)  | 1968  | 0    | 0     | 487   | 0     | 499   |
| Parking (#/hr)         | 0     | 0    |       | 0     |       |       |
| Turn Type              |       |      | Split |       | Split |       |
| Protected Phases       | 2     |      | 8     | 8     | 4     | 4     |
| Permitted Phases       |       |      |       |       |       |       |
| Actuated Green, G (s)  | 37.0  |      |       | 17.0  |       | 17.0  |
| Effective Green, g (s) | 36.0  |      |       | 16.0  |       | 16.0  |
| Actuated g/C Ratio     | 0.45  |      |       | 0.20  |       | 0.20  |
| Clearance Time (s)     | 3.0   |      |       | 3.0   |       | 3.0   |
| Lane Grp Cap (vph)     | 2111  |      |       | 975   |       | 687   |
| v/s Ratio Prot         | c0.42 |      |       | c0.10 |       | c0.15 |
| v/s Ratio Perm         |       |      |       |       |       |       |
| v/c Ratio              | 0.93  |      |       | 0.50  |       | 0.73  |
| Uniform Delay, d1      | 20.8  |      |       | 28.4  |       | 30.0  |
| Progression Factor     | 0.47  |      |       | 1.00  |       | 1.00  |
| Incremental Delay, d2  | 6.0   |      |       | 1.8   |       | 6.6   |
| Delay (s)              | 15.8  |      |       | 30.3  |       | 36.6  |
| Level of Service       | B     |      |       | C     |       | D     |
| Approach Delay (s)     | 15.8  |      |       | 30.3  |       | 36.6  |
| Approach LOS           | B     |      |       | C     |       | D     |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 21.7  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.78  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 75.1% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis

3429: J Street & Alhambra

6/1/2005



| Movement               | EBL   | EBT  | EBR  | WBL   | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|-------|------|------|-------|------|------|------|------|------|------|------|------|
| Lane Configurations    | ↶     | ↷    |      | ↶     | ↷    | ↷    |      | ↷    |      |      | ↷    | ↷    |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0   | 4.0  |      | 4.0   | 4.0  | 4.0  |      | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor      | 1.00  | 0.95 |      | 0.95  | 0.95 | 1.00 |      | 0.95 |      |      | 0.95 |      |
| Frt                    | 1.00  | 0.97 |      | 1.00  | 1.00 | 0.85 |      | 0.94 |      |      | 1.00 |      |
| Flt Protected          | 0.95  | 1.00 |      | 0.95  | 0.95 | 1.00 |      | 1.00 |      |      | 0.99 |      |
| Satd. Flow (prot)      | 1770  | 3259 |      | 1681  | 1681 | 1425 |      | 3172 |      |      | 3343 |      |
| Flt Permitted          | 0.95  | 1.00 |      | 0.95  | 0.95 | 1.00 |      | 1.00 |      |      | 0.77 |      |
| Satd. Flow (perm)      | 1770  | 3259 |      | 1681  | 1681 | 1425 |      | 3172 |      |      | 2586 |      |
| Volume (vph)           | 160   | 944  | 243  | 629   | 0    | 299  | 0    | 285  | 172  | 50   | 380  | 0    |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 160   | 944  | 243  | 629   | 0    | 299  | 0    | 285  | 172  | 50   | 380  | 0    |
| RTOR Reduction (vph)   | 0     | 29   | 0    | 0     | 0    | 228  | 0    | 112  | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 160   | 1158 | 0    | 315   | 314  | 71   | 0    | 345  | 0    | 0    | 430  | 0    |
| Parking (#/hr)         |       | 0    | 0    |       |      | 0    |      | 0    | 0    |      | 0    |      |
| Turn Type              | Split |      |      | Split |      | Perm |      |      |      | Perm |      |      |
| Protected Phases       | 2     | 2    |      | 6     | 6    |      |      | 8    |      |      | 4    |      |
| Permitted Phases       |       |      |      |       |      | 6    |      |      |      | 4    |      |      |
| Actuated Green, G (s)  | 34.0  | 34.0 |      | 20.0  | 20.0 | 20.0 |      | 17.0 |      |      | 17.0 |      |
| Effective Green, g (s) | 33.0  | 33.0 |      | 19.0  | 19.0 | 19.0 |      | 16.0 |      |      | 16.0 |      |
| Actuated g/C Ratio     | 0.41  | 0.41 |      | 0.24  | 0.24 | 0.24 |      | 0.20 |      |      | 0.20 |      |
| Clearance Time (s)     | 3.0   | 3.0  |      | 3.0   | 3.0  | 3.0  |      | 3.0  |      |      | 3.0  |      |
| Lane Grp Cap (vph)     | 730   | 1344 |      | 399   | 399  | 338  |      | 634  |      |      | 517  |      |
| v/s Ratio Prot         | 0.09  | 0.36 |      | 0.19  | 0.19 |      |      | 0.11 |      |      |      |      |
| v/s Ratio Perm         |       |      |      |       |      | 0.05 |      |      |      |      | 0.17 |      |
| v/c Ratio              | 0.22  | 0.86 |      | 0.79  | 0.79 | 0.21 |      | 0.54 |      |      | 0.83 |      |
| Uniform Delay, d1      | 15.2  | 21.4 |      | 28.6  | 28.6 | 24.5 |      | 28.7 |      |      | 30.7 |      |
| Progression Factor     | 0.53  | 0.51 |      | 1.00  | 1.00 | 1.00 |      | 0.84 |      |      | 1.00 |      |
| Incremental Delay, d2  | 0.6   | 7.0  |      | 14.7  | 14.5 | 1.4  |      | 3.1  |      |      | 14.5 |      |
| Delay (s)              | 8.8   | 17.8 |      | 43.3  | 43.1 | 25.9 |      | 27.3 |      |      | 45.2 |      |
| Level of Service       | A     | B    |      | D     | D    | C    |      | C    |      |      | D    |      |
| Approach Delay (s)     |       | 16.8 |      |       | 37.6 |      |      | 27.3 |      |      | 45.2 |      |
| Approach LOS           |       | B    |      |       | D    |      |      | C    |      |      | D    |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 28.3  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.83  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 90.0% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3435: N Street & 29th Street

6/1/2005



| Movement               | EBT  | EBR   | EBR2 | WBL2  | WBL   | WBT   | SBL2 | SBL   | SBT  | SBR  |
|------------------------|------|-------|------|-------|-------|-------|------|-------|------|------|
| Lane Configurations    | ↑    | ↔     |      |       | ↔     | ↔     |      | ↔     | ↑↔   |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900  | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    | 4.0  | 4.0   |      |       | 4.0   | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor      | 1.00 | 1.00  |      |       | 0.95  | 0.95  |      | 0.97  | 0.95 |      |
| Frnt                   | 1.00 | 0.85  |      |       | 1.00  | 1.00  |      | 1.00  | 1.00 |      |
| Flt Protected          | 1.00 | 1.00  |      |       | 0.95  | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)      | 1676 | 1425  |      |       | 1681  | 1770  |      | 3433  | 3362 |      |
| Flt Permitted          | 1.00 | 1.00  |      |       | 0.95  | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)      | 1676 | 1425  |      |       | 1681  | 1770  |      | 3433  | 3362 |      |
| Volume (vph)           | 517  | 294   | 174  | 150   | 142   | 318   | 165  | 1023  | 793  | 1    |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 517  | 294   | 174  | 150   | 142   | 318   | 165  | 1023  | 793  | 1    |
| RTOR Reduction (vph)   | 0    | 27    | 0    | 0     | 0     | 0     | 0    | 0     | 0    | 0    |
| Lane Group Flow (vph)  | 517  | 441   | 0    | 0     | 292   | 318   | 0    | 1188  | 794  | 0    |
| Parking (#/hr)         | 0    | 0     | 0    |       |       |       |      |       | 0    |      |
| Turn Type              |      | Perm  |      | Split | Split |       | Perm | Perm  |      |      |
| Protected Phases       | 4    |       |      | 8     | 8     | 8     |      |       | 6    |      |
| Permitted Phases       |      | 4     |      |       |       |       | 6    | 6     |      |      |
| Actuated Green, G (s)  | 26.0 | 26.0  |      |       | 16.0  | 16.0  |      | 29.0  | 29.0 |      |
| Effective Green, g (s) | 25.0 | 25.0  |      |       | 15.0  | 15.0  |      | 28.0  | 28.0 |      |
| Actuated g/C Ratio     | 0.31 | 0.31  |      |       | 0.19  | 0.19  |      | 0.35  | 0.35 |      |
| Clearance Time (s)     | 3.0  | 3.0   |      |       | 3.0   | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     | 524  | 445   |      |       | 315   | 332   |      | 1202  | 1177 |      |
| v/s Ratio Prot         | 0.31 |       |      |       | 0.17  | c0.18 |      |       | 0.24 |      |
| v/s Ratio Perm         |      | c0.31 |      |       |       |       |      | c0.35 |      |      |
| v/c Ratio              | 0.99 | 0.99  |      |       | 0.93  | 0.96  |      | 0.99  | 0.67 |      |
| Uniform Delay, d1      | 27.3 | 27.4  |      |       | 32.0  | 32.2  |      | 25.8  | 22.1 |      |
| Progression Factor     | 0.88 | 0.87  |      |       | 1.12  | 1.11  |      | 0.83  | 0.86 |      |
| Incremental Delay, d2  | 27.0 | 30.6  |      |       | 28.8  | 33.7  |      | 17.4  | 1.9  |      |
| Delay (s)              | 51.0 | 54.4  |      |       | 64.5  | 69.4  |      | 39.0  | 20.8 |      |
| Level of Service       | D    | D     |      |       | E     | E     |      | D     | C    |      |
| Approach Delay (s)     | 52.6 |       |      |       |       | 67.1  |      |       | 31.7 |      |
| Approach LOS           | D    |       |      |       |       | E     |      |       | C    |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 43.5  | HCM Level of Service | D    |
| HCM Volume to Capacity ratio      | 0.98  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 89.6% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
3436: Capitol & Alhambra

6/1/2005



| Movement               | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL  | NBT  | NBR  | SBL   | SBT  | SBR  |
|------------------------|-------|-------|------|-------|-------|------|------|------|------|-------|------|------|
| Lane Configurations    |       | ↕↕    |      |       | ↕↕    |      | ↖    | ↗    | ↖↗   | ↖     | ↗    | ↖↗   |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    |       | 4.0   |      |       | 4.0   |      | 4.0  | 4.0  | 4.0  | 4.0   | 4.0  | 4.0  |
| Lane Util. Factor      |       | 0.95  |      |       | 0.95  |      | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Frt                    |       | 0.99  |      |       | 0.97  |      | 1.00 | 1.00 | 0.85 | 1.00  | 1.00 | 0.85 |
| Flt Protected          |       | 0.99  |      |       | 1.00  |      | 0.95 | 1.00 | 1.00 | 0.95  | 1.00 | 1.00 |
| Satd. Flow (prot)      |       | 3307  |      |       | 3242  |      | 1593 | 1676 | 1425 | 1593  | 1676 | 1425 |
| Flt Permitted          |       | 0.99  |      |       | 1.00  |      | 0.32 | 1.00 | 1.00 | 0.27  | 1.00 | 1.00 |
| Satd. Flow (perm)      |       | 3307  |      |       | 3242  |      | 534  | 1676 | 1425 | 450   | 1676 | 1425 |
| Volume (vph)           | 95    | 414   | 28   | 49    | 615   | 188  | 54   | 519  | 81   | 189   | 467  | 83   |
| Peak-hour factor, PHF  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 95    | 414   | 28   | 49    | 615   | 188  | 54   | 519  | 81   | 189   | 467  | 83   |
| RTOR Reduction (vph)   | 0     | 5     | 0    | 0     | 33    | 0    | 0    | 0    | 35   | 0     | 0    | 40   |
| Lane Group Flow (vph)  | 0     | 532   | 0    | 0     | 819   | 0    | 54   | 519  | 46   | 189   | 467  | 43   |
| Parking (#/hr)         | 0     | 0     | 0    | 0     | 0     | 0    | 0    | 0    | 0    | 0     | 0    | 0    |
| Turn Type              | Split |       |      | Split |       |      | Perm |      | Perm | Perm  |      | Perm |
| Protected Phases       | 4     | 4     |      | 8     | 8     |      |      | 2    |      |       |      | 6    |
| Permitted Phases       |       |       |      |       |       |      | 2    |      | 2    | 6     |      | 6    |
| Actuated Green, G (s)  |       | 17.0  |      |       | 19.0  |      | 35.0 | 35.0 | 35.0 | 35.0  | 35.0 | 35.0 |
| Effective Green, g (s) |       | 16.0  |      |       | 18.0  |      | 34.0 | 34.0 | 34.0 | 34.0  | 34.0 | 34.0 |
| Actuated g/C Ratio     |       | 0.20  |      |       | 0.22  |      | 0.42 | 0.42 | 0.42 | 0.42  | 0.42 | 0.42 |
| Clearance Time (s)     |       | 3.0   |      |       | 3.0   |      | 3.0  | 3.0  | 3.0  | 3.0   | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |       | 661   |      |       | 729   |      | 227  | 712  | 606  | 191   | 712  | 606  |
| v/s Ratio Prot         |       | c0.16 |      |       | c0.25 |      |      | 0.31 |      |       |      | 0.28 |
| v/s Ratio Perm         |       |       |      |       |       |      | 0.10 |      | 0.03 | c0.42 |      | 0.03 |
| v/c Ratio              |       | 0.81  |      |       | 1.12  |      | 0.24 | 0.73 | 0.08 | 0.99  | 0.66 | 0.07 |
| Uniform Delay, d1      |       | 30.5  |      |       | 31.0  |      | 14.7 | 19.2 | 13.7 | 22.8  | 18.3 | 13.6 |
| Progression Factor     |       | 1.06  |      |       | 1.00  |      | 0.98 | 0.79 | 1.16 | 0.66  | 0.61 | 0.40 |
| Incremental Delay, d2  |       | 9.8   |      |       | 73.0  |      | 1.3  | 3.4  | 0.1  | 53.5  | 3.5  | 0.2  |
| Delay (s)              |       | 42.1  |      |       | 104.0 |      | 15.7 | 18.5 | 16.0 | 68.5  | 14.7 | 5.6  |
| Level of Service       |       | D     |      |       | F     |      | B    | B    | B    | E     | B    | A    |
| Approach Delay (s)     |       | 42.1  |      |       | 104.0 |      |      | 17.9 |      |       | 27.4 |      |
| Approach LOS           |       | D     |      |       | F     |      |      | B    |      |       | C    |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 51.5  | HCM Level of Service | D    |
| HCM Volume to Capacity ratio      | 0.98  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 90.6% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3437: P Street & 29th St off ramp

6/1/2005



| Movement               | WBL  | WBT   | SBT   | SBR  | SWL   | SWR  |
|------------------------|------|-------|-------|------|-------|------|
| Lane Configurations    | ↵    | ↑↑    | ↑↑↵   |      | ↵↵    | ↵    |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900  | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0  | 4.0   | 4.0   |      | 4.0   | 4.0  |
| Lane Util. Factor      | 1.00 | 0.95  | 0.91  |      | 0.97  | 0.91 |
| Frt                    | 1.00 | 1.00  | 0.98  |      | 0.99  | 0.85 |
| Flt Protected          | 0.95 | 1.00  | 1.00  |      | 0.95  | 1.00 |
| Satd. Flow (prot)      | 1593 | 3362  | 4818  |      | 3425  | 1441 |
| Flt Permitted          | 0.95 | 1.00  | 1.00  |      | 0.95  | 1.00 |
| Satd. Flow (perm)      | 1593 | 3362  | 4818  |      | 3425  | 1441 |
| Volume (vph)           | 152  | 828   | 933   | 143  | 355   | 174  |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 152  | 828   | 933   | 143  | 355   | 174  |
| RTOR Reduction (vph)   | 34   | 0     | 25    | 0    | 0     | 0    |
| Lane Group Flow (vph)  | 118  | 828   | 1051  | 0    | 373   | 156  |
| Parking (#/hr)         | 0    | 0     | 0     | 0    |       |      |
| Turn Type              | Perm |       |       |      |       | Perm |
| Protected Phases       |      | 6     | 7     |      | 8     |      |
| Permitted Phases       | 6    |       |       |      |       | 8    |
| Actuated Green, G (s)  | 28.0 | 28.0  | 26.0  |      | 17.0  | 17.0 |
| Effective Green, g (s) | 27.0 | 27.0  | 25.0  |      | 16.0  | 16.0 |
| Actuated g/C Ratio     | 0.34 | 0.34  | 0.31  |      | 0.20  | 0.20 |
| Clearance Time (s)     | 3.0  | 3.0   | 3.0   |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)     | 538  | 1135  | 1506  |      | 685   | 288  |
| v/s Ratio Prot         |      | c0.25 | c0.22 |      | c0.11 |      |
| v/s Ratio Perm         | 0.07 |       |       |      |       | 0.11 |
| v/c Ratio              | 0.22 | 0.73  | 0.70  |      | 0.54  | 0.54 |
| Uniform Delay, d1      | 19.0 | 23.3  | 24.2  |      | 28.7  | 28.7 |
| Progression Factor     | 0.09 | 0.27  | 0.52  |      | 1.00  | 1.00 |
| Incremental Delay, d2  | 0.7  | 3.0   | 1.7   |      | 3.1   | 7.1  |
| Delay (s)              | 2.3  | 9.2   | 14.2  |      | 31.8  | 35.8 |
| Level of Service       | A    | A     | B     |      | C     | D    |
| Approach Delay (s)     |      | 8.2   | 14.2  |      | 33.0  |      |
| Approach LOS           |      | A     | B     |      | C     |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 15.8  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.67  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 66.0% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |



HCM Signalized Intersection Capacity Analysis  
 3438: P Street & Alhambra

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL   | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|-------|------|-------|------|------|
| Lane Configurations    |      |      |      |      | ↔↑↔  |      | ↖    | ↗     |      | ↖     | ↗    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      | 4.0  | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor      |      |      |      |      | 0.91 |      | 1.00 | 1.00  |      | 1.00  | 1.00 |      |
| Frt                    |      |      |      |      | 0.98 |      | 1.00 | 0.94  |      | 1.00  | 0.97 |      |
| Flt Protected          |      |      |      |      | 1.00 |      | 0.95 | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)      |      |      |      |      | 4956 |      | 1770 | 1744  |      | 1770  | 1815 |      |
| Flt Permitted          |      |      |      |      | 1.00 |      | 0.95 | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)      |      |      |      |      | 4956 |      | 1770 | 1744  |      | 1770  | 1815 |      |
| Volume (vph)           | 0    | 0    | 0    | 73   | 972  | 185  | 124  | 393   | 289  | 342   | 409  | 85   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 73   | 972  | 185  | 124  | 393   | 289  | 342   | 409  | 85   |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 32   | 0    | 0    | 33    | 0    | 0     | 9    | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 1199 | 0    | 124  | 649   | 0    | 342   | 485  | 0    |
| Turn Type              |      |      |      |      | Perm |      | Prot |       |      | Prot  |      |      |
| Protected Phases       |      |      |      |      |      | 6    | 3    | 8     |      | 7     | 4    |      |
| Permitted Phases       |      |      |      |      | 6    |      |      |       |      |       |      |      |
| Actuated Green, G (s)  |      |      |      |      | 21.0 |      | 13.0 | 33.0  |      | 17.0  | 37.0 |      |
| Effective Green, g (s) |      |      |      |      | 20.0 |      | 12.0 | 32.0  |      | 16.0  | 36.0 |      |
| Actuated g/C Ratio     |      |      |      |      | 0.25 |      | 0.15 | 0.40  |      | 0.20  | 0.45 |      |
| Clearance Time (s)     |      |      |      |      | 3.0  |      | 3.0  | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     |      |      |      |      | 1239 |      | 266  | 698   |      | 354   | 817  |      |
| v/s Ratio Prot         |      |      |      |      |      |      | 0.07 | c0.37 |      | c0.19 | 0.27 |      |
| v/s Ratio Perm         |      |      |      |      | 0.24 |      |      |       |      |       |      |      |
| v/c Ratio              |      |      |      |      | 0.97 |      | 0.47 | 0.93  |      | 0.97  | 0.59 |      |
| Uniform Delay, d1      |      |      |      |      | 29.7 |      | 31.1 | 22.9  |      | 31.7  | 16.5 |      |
| Progression Factor     |      |      |      |      | 1.00 |      | 1.00 | 1.00  |      | 0.92  | 0.96 |      |
| Incremental Delay, d2  |      |      |      |      | 18.8 |      | 5.8  | 20.7  |      | 27.3  | 1.7  |      |
| Delay (s)              |      |      |      |      | 48.5 |      | 36.8 | 43.6  |      | 56.6  | 17.5 |      |
| Level of Service       |      |      |      |      | D    |      | D    | D     |      | E     | B    |      |
| Approach Delay (s)     |      | 0.0  |      |      | 48.5 |      |      | 42.5  |      |       | 33.5 |      |
| Approach LOS           |      | A    |      |      | D    |      |      | D     |      |       | C    |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 42.5  | HCM Level of Service | D    |
| HCM Volume to Capacity ratio      | 0.95  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 91.7% | ICU Level of Service | F    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 3444: Q Street & 29th Street

6/1/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|-------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑↑    |      |      |      |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      |      |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 0.95  |      |      |      |      |      |      |      |      | 0.91 |      |
| Frt                    |      | 0.94  |      |      |      |      |      |      |      |      | 1.00 |      |
| Flt Protected          |      | 1.00  |      |      |      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (prot)      |      | 3340  |      |      |      |      |      |      |      |      | 5055 |      |
| Flt Permitted          |      | 1.00  |      |      |      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (perm)      |      | 3340  |      |      |      |      |      |      |      |      | 5055 |      |
| Volume (vph)           | 0    | 572   | 344  | 0    | 0    | 0    | 0    | 0    | 0    | 176  | 1290 | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 572   | 344  | 0    | 0    | 0    | 0    | 0    | 0    | 176  | 1290 | 0    |
| RTOR Reduction (vph)   | 0    | 11    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 22   | 0    |
| Lane Group Flow (vph)  | 0    | 905   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1444 | 0    |
| Turn Type              |      |       |      |      |      |      |      |      |      |      | Perm |      |
| Protected Phases       |      | 2     |      |      |      |      |      |      |      |      |      | 4    |
| Permitted Phases       |      |       |      |      |      |      |      |      |      |      | 4    |      |
| Actuated Green, G (s)  |      | 38.0  |      |      |      |      |      |      |      |      | 36.0 |      |
| Effective Green, g (s) |      | 37.0  |      |      |      |      |      |      |      |      | 35.0 |      |
| Actuated g/C Ratio     |      | 0.46  |      |      |      |      |      |      |      |      | 0.44 |      |
| Clearance Time (s)     |      | 3.0   |      |      |      |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 1545  |      |      |      |      |      |      |      |      | 2212 |      |
| v/s Ratio Prot         |      | c0.27 |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |       |      |      |      |      |      |      |      |      | 0.29 |      |
| v/c Ratio              |      | 0.59  |      |      |      |      |      |      |      |      | 0.65 |      |
| Uniform Delay, d1      |      | 15.9  |      |      |      |      |      |      |      |      | 17.7 |      |
| Progression Factor     |      | 1.00  |      |      |      |      |      |      |      |      | 0.30 |      |
| Incremental Delay, d2  |      | 1.6   |      |      |      |      |      |      |      |      | 1.2  |      |
| Delay (s)              |      | 17.5  |      |      |      |      |      |      |      |      | 6.6  |      |
| Level of Service       |      | B     |      |      |      |      |      |      |      |      | A    |      |
| Approach Delay (s)     |      | 17.5  |      |      | 0.0  |      |      | 0.0  |      |      | 6.6  |      |
| Approach LOS           |      | B     |      |      | A    |      |      | A    |      |      | A    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.8  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.62  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 62.0% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
3467: N Street & Alhambra

6/1/2005



| Movement                          | EBL  | EBT   | EBR  | WBL  | WBT                  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|-------|------|------|----------------------|------|------|-------|------|------|------|------|
| Lane Configurations               |      | ↕     |      |      | ↕                    |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900 | 1900                 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0   |      |      | 4.0                  |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor                 |      | 1.00  |      |      | 1.00                 |      |      | 1.00  |      |      | 1.00 |      |
| Frt                               |      | 0.94  |      |      | 0.99                 |      |      | 0.99  |      |      | 0.98 |      |
| Flt Protected                     |      | 0.99  |      |      | 0.99                 |      |      | 1.00  |      |      | 1.00 |      |
| Satd. Flow (prot)                 |      | 1561  |      |      | 1642                 |      |      | 1654  |      |      | 1648 |      |
| Flt Permitted                     |      | 0.90  |      |      | 0.84                 |      |      | 0.97  |      |      | 0.99 |      |
| Satd. Flow (perm)                 |      | 1415  |      |      | 1399                 |      |      | 1614  |      |      | 1635 |      |
| Volume (vph)                      | 105  | 256   | 305  | 54   | 221                  | 26   | 21   | 508   | 51   | 9    | 484  | 68   |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00 | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 105  | 256   | 305  | 54   | 221                  | 26   | 21   | 508   | 51   | 9    | 484  | 68   |
| RTOR Reduction (vph)              | 0    | 38    | 0    | 0    | 4                    | 0    | 0    | 4     | 0    | 0    | 6    | 0    |
| Lane Group Flow (vph)             | 0    | 628   |      | 0    | 0                    | 297  | 0    | 0     | 576  | 0    | 0    | 555  |
| Parking (#/hr)                    | 0    | 0     | 0    | 0    | 0                    | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type                         | Perm |       |      | Perm |                      |      | Perm |       |      | Perm |      |      |
| Protected Phases                  |      | 4     |      |      | 8                    |      |      | 2     |      |      | 6    |      |
| Permitted Phases                  | 4    |       |      | 8    |                      |      | 2    |       |      | 6    |      |      |
| Actuated Green, G (s)             |      | 40.0  |      |      | 40.0                 |      |      | 34.0  |      |      | 34.0 |      |
| Effective Green, g (s)            |      | 39.0  |      |      | 39.0                 |      |      | 33.0  |      |      | 33.0 |      |
| Actuated g/C Ratio                |      | 0.49  |      |      | 0.49                 |      |      | 0.41  |      |      | 0.41 |      |
| Clearance Time (s)                |      | 3.0   |      |      | 3.0                  |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |      | 690   |      |      | 682                  |      |      | 666   |      |      | 674  |      |
| v/s Ratio Prot                    |      |       |      |      |                      |      |      |       |      |      |      |      |
| v/s Ratio Perm                    |      | c0.44 |      |      | 0.21                 |      |      | c0.36 |      |      | 0.34 |      |
| v/c Ratio                         |      | 0.91  |      |      | 0.44                 |      |      | 0.86  |      |      | 0.82 |      |
| Uniform Delay, d1                 |      | 18.9  |      |      | 13.3                 |      |      | 21.5  |      |      | 20.9 |      |
| Progression Factor                |      | 0.21  |      |      | 1.00                 |      |      | 0.45  |      |      | 0.36 |      |
| Incremental Delay, d2             |      | 13.0  |      |      | 2.0                  |      |      | 5.4   |      |      | 8.1  |      |
| Delay (s)                         |      | 17.0  |      |      | 15.4                 |      |      | 15.1  |      |      | 15.6 |      |
| Level of Service                  |      | B     |      |      | B                    |      |      | B     |      |      | B    |      |
| Approach Delay (s)                |      | 17.0  |      |      | 15.4                 |      |      | 15.1  |      |      | 15.6 |      |
| Approach LOS                      |      | B     |      |      | B                    |      |      | B     |      |      | B    |      |
| <b>Intersection Summary</b>       |      |       |      |      |                      |      |      |       |      |      |      |      |
| HCM Average Control Delay         |      | 15.9  |      |      | HCM Level of Service |      |      | B     |      |      |      |      |
| HCM Volume to Capacity ratio      |      | 0.89  |      |      |                      |      |      |       |      |      |      |      |
| Actuated Cycle Length (s)         |      | 80.0  |      |      | Sum of lost time (s) |      |      | 8.0   |      |      |      |      |
| Intersection Capacity Utilization |      | 97.2% |      |      | ICU Level of Service |      |      | F     |      |      |      |      |
| Analysis Period (min)             |      | 15    |      |      |                      |      |      |       |      |      |      |      |
| c Critical Lane Group             |      |       |      |      |                      |      |      |       |      |      |      |      |

# HCM Signalized Intersection Capacity Analysis

5802: K Street & 29th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑    | ↗    | ↖    | ↑     |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  | 4.0  | 4.0   |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00 | 1.00 | 1.00 | 1.00  |      |      |      |      |      | 0.91 |      |
| Frt                    |      | 1.00 | 0.85 | 1.00 | 1.00  |      |      |      |      |      | 0.98 |      |
| Flt Protected          |      | 1.00 | 1.00 | 0.95 | 1.00  |      |      |      |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 1863 | 1583 | 1770 | 1863  |      |      |      |      |      | 4963 |      |
| Flt Permitted          |      | 1.00 | 1.00 | 0.47 | 1.00  |      |      |      |      |      | 1.00 |      |
| Satd. Flow (perm)      |      | 1863 | 1583 | 870  | 1863  |      |      |      |      |      | 4963 |      |
| Volume (vph)           | 0    | 351  | 262  | 199  | 545   | 0    | 0    | 0    | 0    | 137  | 1174 | 198  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 351  | 262  | 199  | 545   | 0    | 0    | 0    | 0    | 137  | 1174 | 198  |
| RTOR Reduction (vph)   | 0    | 0    | 12   | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 25   | 0    |
| Lane Group Flow (vph)  | 0    | 351  | 250  | 199  | 545   | 0    | 0    | 0    | 0    | 0    | 1484 | 0    |
| Turn Type              |      |      | Perm | Perm |       |      |      |      |      |      | Perm |      |
| Protected Phases       |      | 4    |      |      | 8     |      |      |      |      |      |      | 6    |
| Permitted Phases       |      |      | 4    | 8    |       |      |      |      |      | 6    |      |      |
| Actuated Green, G (s)  |      | 40.0 | 40.0 | 40.0 | 40.0  |      |      |      |      |      | 34.0 |      |
| Effective Green, g (s) |      | 39.0 | 39.0 | 39.0 | 39.0  |      |      |      |      |      | 33.0 |      |
| Actuated g/C Ratio     |      | 0.49 | 0.49 | 0.49 | 0.49  |      |      |      |      |      | 0.41 |      |
| Clearance Time (s)     |      | 3.0  | 3.0  | 3.0  | 3.0   |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 908  | 772  | 424  | 908   |      |      |      |      |      | 2047 |      |
| v/s Ratio Prot         |      | 0.19 |      |      | c0.29 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      | 0.16 | 0.23 |       |      |      |      |      |      | 0.30 |      |
| v/c Ratio              |      | 0.39 | 0.32 | 0.47 | 0.60  |      |      |      |      |      | 0.72 |      |
| Uniform Delay, d1      |      | 12.9 | 12.5 | 13.6 | 14.9  |      |      |      |      |      | 19.7 |      |
| Progression Factor     |      | 0.60 | 0.58 | 1.31 | 1.30  |      |      |      |      |      | 0.94 |      |
| Incremental Delay, d2  |      | 1.1  | 1.0  | 3.0  | 2.4   |      |      |      |      |      | 1.6  |      |
| Delay (s)              |      | 8.9  | 8.3  | 20.9 | 21.6  |      |      |      |      |      | 20.0 |      |
| Level of Service       |      | A    | A    | C    | C     |      |      |      |      |      | C    |      |
| Approach Delay (s)     |      | 8.7  |      |      | 21.4  |      |      | 0.0  |      |      | 20.0 |      |
| Approach LOS           |      | A    |      |      | C     |      |      | A    |      |      | C    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 18.0  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.66  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 69.4% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 5848: J Street & 30th Street

6/1/2005



| Movement               | EBL2 | EBL  | EBT  | WBR2 | NBL  | NBT  | NBR  |
|------------------------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↖    | ↖↖↖  | ↖    | ↖    | ↖↖   |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  |      | 4.0  | 4.0  |      |
| Lane Util. Factor      |      | 0.86 | 0.86 |      | 0.91 | 0.91 |      |
| Fr't                   |      | 1.00 | 1.00 |      | 1.00 | 0.96 |      |
| Flt Protected          |      | 0.95 | 1.00 |      | 0.95 | 0.99 |      |
| Satd. Flow (prot)      |      | 1522 | 4632 |      | 1610 | 3221 |      |
| Flt Permitted          |      | 0.95 | 1.00 |      | 0.95 | 0.99 |      |
| Satd. Flow (perm)      |      | 1522 | 4632 |      | 1610 | 3221 |      |
| Volume (vph)           | 226  | 236  | 1043 | 0    | 377  | 355  | 178  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 226  | 236  | 1043 | 0    | 377  | 355  | 178  |
| RTOR Reduction (vph)   | 0    | 60   | 0    | 0    | 0    | 33   | 0    |
| Lane Group Flow (vph)  | 0    | 334  | 1111 | 0    | 298  | 579  | 0    |
| Parking (#/hr)         |      |      | 0    | 0    |      |      | 0    |
| Turn Type              | Perm | Perm |      | Free | Perm |      |      |
| Protected Phases       |      |      | 2    |      |      | 8    |      |
| Permitted Phases       | 2    | 2    |      | Free | 8    |      |      |
| Actuated Green, G (s)  |      | 39.0 | 39.0 |      | 35.0 | 35.0 |      |
| Effective Green, g (s) |      | 38.0 | 38.0 |      | 34.0 | 34.0 |      |
| Actuated g/C Ratio     |      | 0.48 | 0.48 |      | 0.42 | 0.42 |      |
| Clearance Time (s)     |      | 3.0  | 3.0  |      | 3.0  | 3.0  |      |
| Lane Grp Cap (vph)     |      | 723  | 2200 |      | 684  | 1369 |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      | 0.22 | 0.24 |      | 0.19 | 0.18 |      |
| v/c Ratio              |      | 0.46 | 0.50 |      | 0.44 | 0.42 |      |
| Uniform Delay, d1      |      | 14.1 | 14.5 |      | 16.2 | 16.1 |      |
| Progression Factor     |      | 0.06 | 0.23 |      | 0.65 | 0.59 |      |
| Incremental Delay, d2  |      | 0.9  | 0.3  |      | 1.7  | 0.8  |      |
| Delay (s)              |      | 1.7  | 3.6  |      | 12.2 | 10.4 |      |
| Level of Service       |      | A    | A    |      | B    | B    |      |
| Approach Delay (s)     |      |      | 3.1  |      |      | 11.0 |      |
| Approach LOS           |      |      | A    |      |      | B    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 6.1   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.47  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 46.5% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
5849: L Street & 30th Street

6/1/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT   | WBR  | NBL                  | NBT   | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|-------|------|-------|------|----------------------|-------|------|------|------|------|
| Lane Configurations               |      |      |       |      | ↑↑↑   |      | ↖                    | ↑↑↑   |      |      |      |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 | 1900                 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      |      |       |      | 4.0   |      | 4.0                  | 4.0   |      |      |      |      |
| Lane Util. Factor                 |      |      |       |      | 0.91  |      | 0.86                 | 0.86  |      |      |      |      |
| Frt                               |      |      |       |      | 0.97  |      | 1.00                 | 1.00  |      |      |      |      |
| Flt Protected                     |      |      |       |      | 1.00  |      | 0.95                 | 1.00  |      |      |      |      |
| Satd. Flow (prot)                 |      |      |       |      | 4911  |      | 1522                 | 4646  |      |      |      |      |
| Flt Permitted                     |      |      |       |      | 1.00  |      | 0.95                 | 1.00  |      |      |      |      |
| Satd. Flow (perm)                 |      |      |       |      | 4911  |      | 1522                 | 4646  |      |      |      |      |
| Volume (vph)                      | 0    | 0    | 0     | 0    | 450   | 133  | 178                  | 1190  | 0    | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00                 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 0    | 450   | 133  | 178                  | 1190  | 0    | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 0    | 29    | 0    | 87                   | 0     | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 0    | 554   | 0    | 91                   | 1190  | 0    | 0    | 0    | 0    |
| Parking (#/hr)                    |      |      |       |      |       | 0    |                      | 0     |      |      |      |      |
| Turn Type                         |      |      |       |      |       |      | Perm                 |       |      |      |      |      |
| Protected Phases                  |      |      |       |      | 6     |      |                      | 8     |      |      |      |      |
| Permitted Phases                  |      |      |       |      |       |      | 8                    |       |      |      |      |      |
| Actuated Green, G (s)             |      |      |       |      | 32.0  |      | 42.0                 | 42.0  |      |      |      |      |
| Effective Green, g (s)            |      |      |       |      | 31.0  |      | 41.0                 | 41.0  |      |      |      |      |
| Actuated g/C Ratio                |      |      |       |      | 0.39  |      | 0.51                 | 0.51  |      |      |      |      |
| Clearance Time (s)                |      |      |       |      | 3.0   |      | 3.0                  | 3.0   |      |      |      |      |
| Lane Grp Cap (vph)                |      |      |       |      | 1903  |      | 780                  | 2381  |      |      |      |      |
| v/s Ratio Prot                    |      |      |       |      | c0.11 |      |                      | c0.26 |      |      |      |      |
| v/s Ratio Perm                    |      |      |       |      |       |      | 0.06                 |       |      |      |      |      |
| v/c Ratio                         |      |      |       |      | 0.29  |      | 0.12                 | 0.50  |      |      |      |      |
| Uniform Delay, d1                 |      |      |       |      | 16.9  |      | 10.1                 | 12.8  |      |      |      |      |
| Progression Factor                |      |      |       |      | 1.15  |      | 0.08                 | 0.59  |      |      |      |      |
| Incremental Delay, d2             |      |      |       |      | 0.3   |      | 0.3                  | 0.7   |      |      |      |      |
| Delay (s)                         |      |      |       |      | 19.8  |      | 1.1                  | 8.2   |      |      |      |      |
| Level of Service                  |      |      |       |      | B     |      | A                    | A     |      |      |      |      |
| Approach Delay (s)                |      | 0.0  |       |      | 19.8  |      |                      | 7.3   |      |      | 0.0  |      |
| Approach LOS                      |      | A    |       |      | B     |      |                      | A     |      |      | A    |      |
| <b>Intersection Summary</b>       |      |      |       |      |       |      |                      |       |      |      |      |      |
| HCM Average Control Delay         |      |      | 11.0  |      |       |      | HCM Level of Service |       |      |      | B    |      |
| HCM Volume to Capacity ratio      |      |      | 0.41  |      |       |      |                      |       |      |      |      |      |
| Actuated Cycle Length (s)         |      |      | 80.0  |      |       |      | Sum of lost time (s) |       |      |      | 8.0  |      |
| Intersection Capacity Utilization |      |      | 50.8% |      |       |      | ICU Level of Service |       |      |      | A    |      |
| Analysis Period (min)             |      |      | 15    |      |       |      |                      |       |      |      |      |      |
| c Critical Lane Group             |      |      |       |      |       |      |                      |       |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
5880: N Street & 30th Street

6/1/2005



| Movement               | EBL  | EBT   | WBT  | WBR  | NBL  | NBT  | NBR   | NEL2 | NEL   | NER  |
|------------------------|------|-------|------|------|------|------|-------|------|-------|------|
| Lane Configurations    | ↖    | ↑     | ↗    |      |      | ↖↗   |       |      | ↖↗    |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0  | 4.0   | 4.0  |      |      | 4.0  |       |      | 4.0   |      |
| Lane Util. Factor      | 1.00 | 1.00  | 1.00 |      |      | 0.91 |       |      | 0.97  |      |
| Frt                    | 1.00 | 1.00  | 0.97 |      |      | 0.99 |       |      | 0.99  |      |
| Flt Protected          | 0.95 | 1.00  | 1.00 |      |      | 0.99 |       |      | 0.96  |      |
| Satd. Flow (prot)      | 1770 | 1863  | 1813 |      |      | 4974 |       |      | 3414  |      |
| Flt Permitted          | 0.50 | 1.00  | 1.00 |      |      | 0.99 |       |      | 0.96  |      |
| Satd. Flow (perm)      | 937  | 1863  | 1813 |      |      | 4974 |       |      | 3414  |      |
| Volume (vph)           | 97   | 592   | 230  | 57   | 87   | 381  | 47    | 287  | 389   | 57   |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 97   | 592   | 230  | 57   | 87   | 381  | 47    | 287  | 389   | 57   |
| RTOR Reduction (vph)   | 0    | 0     | 11   | 0    | 0    | 15   | 0     | 0    | 0     | 0    |
| Lane Group Flow (vph)  | 97   | 592   | 276  | 0    | 0    | 500  | 0     | 0    | 733   | 0    |
| Turn Type              | Perm |       |      | Perm |      |      | Split |      |       |      |
| Protected Phases       |      | 4     | 8    |      |      | 2    |       | 6    | 6     |      |
| Permitted Phases       | 4    |       |      |      | 2    |      |       |      |       |      |
| Actuated Green, G (s)  | 35.0 | 35.0  | 35.0 |      |      | 13.0 |       |      | 23.0  |      |
| Effective Green, g (s) | 34.0 | 34.0  | 34.0 |      |      | 12.0 |       |      | 22.0  |      |
| Actuated g/C Ratio     | 0.42 | 0.42  | 0.42 |      |      | 0.15 |       |      | 0.28  |      |
| Clearance Time (s)     | 3.0  | 3.0   | 3.0  |      |      | 3.0  |       |      | 3.0   |      |
| Lane Grp Cap (vph)     | 398  | 792   | 771  |      |      | 746  |       |      | 939   |      |
| v/s Ratio Prot         |      | c0.32 | 0.15 |      |      |      |       |      | c0.21 |      |
| v/s Ratio Perm         | 0.10 |       |      |      |      | 0.10 |       |      |       |      |
| v/c Ratio              | 0.24 | 0.75  | 0.36 |      |      | 0.67 |       |      | 0.78  |      |
| Uniform Delay, d1      | 14.8 | 19.4  | 15.6 |      |      | 32.1 |       |      | 26.8  |      |
| Progression Factor     | 0.19 | 0.18  | 0.60 |      |      | 1.19 |       |      | 1.00  |      |
| Incremental Delay, d2  | 0.4  | 1.8   | 1.1  |      |      | 4.6  |       |      | 6.4   |      |
| Delay (s)              | 3.2  | 5.2   | 10.5 |      |      | 42.9 |       |      | 33.2  |      |
| Level of Service       | A    | A     | B    |      |      | D    |       |      | C     |      |
| Approach Delay (s)     |      | 4.9   | 10.5 |      |      | 42.9 |       |      | 33.2  |      |
| Approach LOS           |      | A     | B    |      |      | D    |       |      | C     |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 23.8  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.74  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 72.4% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 5882: P Street & 30th Street

6/1/2005



| Movement               | WBT    | WBR  | WBR2 | NBL2 | NBL   | NBT  |
|------------------------|--------|------|------|------|-------|------|
| Lane Configurations    | ↑↑↑    |      |      |      | ↑     | ↑↑↑  |
| Ideal Flow (vphpl)     | 1900   | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0    |      |      |      | 4.0   | 4.0  |
| Lane Util. Factor      | 0.91   |      |      |      | 1.00  | 0.91 |
| Frt                    | 0.94   |      |      |      | 1.00  | 1.00 |
| Flt Protected          | 1.00   |      |      |      | 0.95  | 1.00 |
| Satd. Flow (prot)      | 4794   |      |      |      | 1593  | 4916 |
| Flt Permitted          | 1.00   |      |      |      | 0.95  | 1.00 |
| Satd. Flow (perm)      | 4794   |      |      |      | 1593  | 4916 |
| Volume (vph)           | 773    | 346  | 132  | 110  | 503   | 375  |
| Peak-hour factor, PHF  | 1.00   | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 773    | 346  | 132  | 110  | 503   | 375  |
| RTOR Reduction (vph)   | 19     | 0    | 0    | 0    | 10    | 0    |
| Lane Group Flow (vph)  | 1232   | 0    | 0    | 0    | 603   | 375  |
| Parking (#/hr)         |        | 0    | 0    | 0    | 0     | 0    |
| Turn Type              |        |      |      | Perm | Perm  |      |
| Protected Phases       | 6      |      |      |      |       | 8    |
| Permitted Phases       |        |      |      | 8    | 8     |      |
| Actuated Green, G (s)  | 28.0   |      |      |      | 46.0  | 46.0 |
| Effective Green, g (s) | 27.0   |      |      |      | 45.0  | 45.0 |
| Actuated g/C Ratio     | 0.34   |      |      |      | 0.56  | 0.56 |
| Clearance Time (s)     | 3.0    |      |      |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)     | 1618   |      |      |      | 896   | 2765 |
| v/s Ratio Prot         | c0.26  |      |      |      |       | 0.08 |
| v/s Ratio Perm         |        |      |      |      | c0.38 |      |
| v/c Ratio              | 0.85dr |      |      |      | 0.67  | 0.14 |
| Uniform Delay, d1      | 23.6   |      |      |      | 12.3  | 8.3  |
| Progression Factor     | 0.36   |      |      |      | 1.00  | 1.00 |
| Incremental Delay, d2  | 1.8    |      |      |      | 4.0   | 0.1  |
| Delay (s)              | 10.2   |      |      |      | 16.4  | 8.4  |
| Level of Service       | B      |      |      |      | B     | A    |
| Approach Delay (s)     | 10.2   |      |      |      |       | 13.3 |
| Approach LOS           | B      |      |      |      |       | B    |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.6  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.71  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 66.3% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |

dr Defacto Right Lane. Recode with 1 though lane as a right lane.  
 c Critical Lane Group



HCM Signalized Intersection Capacity Analysis  
5886: Capitol & 30th Street

6/1/2005



| Movement               | EBL   | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|-------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    | ↖     | ↗    |      |      | ↖     | ↗    |      | ↖    | ↗    |      |      |      |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0   | 4.0  |      |      | 4.0   |      |      | 4.0  |      |      |      |      |
| Lane Util. Factor      | 1.00  | 0.95 |      |      | 0.95  |      |      | 0.91 |      |      |      |      |
| Frnt                   | 1.00  | 1.00 |      |      | 0.98  |      |      | 0.97 |      |      |      |      |
| Flt Protected          | 0.95  | 1.00 |      |      | 1.00  |      |      | 1.00 |      |      |      |      |
| Satd. Flow (prot)      | 1770  | 3539 |      |      | 3482  |      |      | 4930 |      |      |      |      |
| Flt Permitted          | 0.95  | 1.00 |      |      | 1.00  |      |      | 1.00 |      |      |      |      |
| Satd. Flow (perm)      | 1770  | 3539 |      |      | 3482  |      |      | 4930 |      |      |      |      |
| Volume (vph)           | 112   | 401  | 0    | 0    | 467   | 56   | 68   | 679  | 164  | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 112   | 401  | 0    | 0    | 467   | 56   | 68   | 679  | 164  | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0     | 0    | 0    | 0    | 12    | 0    | 0    | 43   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 112   | 401  | 0    | 0    | 511   | 0    | 0    | 868  | 0    | 0    | 0    | 0    |
| Turn Type              | Prot  |      |      | Perm |       |      |      |      |      |      |      |      |
| Protected Phases       | 7     | 4    |      |      | 8     |      |      | 2    |      |      |      |      |
| Permitted Phases       |       |      |      |      |       |      | 2    |      |      |      |      |      |
| Actuated Green, G (s)  | 18.0  | 47.0 |      |      | 26.0  |      |      | 27.0 |      |      |      |      |
| Effective Green, g (s) | 17.0  | 46.0 |      |      | 25.0  |      |      | 26.0 |      |      |      |      |
| Actuated g/C Ratio     | 0.21  | 0.57 |      |      | 0.31  |      |      | 0.32 |      |      |      |      |
| Clearance Time (s)     | 3.0   | 3.0  |      |      | 3.0   |      |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)     | 376   | 2035 |      |      | 1088  |      |      | 1602 |      |      |      |      |
| v/s Ratio Prot         | c0.06 | 0.11 |      |      | c0.15 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |       |      |      |      |       |      |      | 0.18 |      |      |      |      |
| v/c Ratio              | 0.30  | 0.20 |      |      | 0.47  |      |      | 0.54 |      |      |      |      |
| Uniform Delay, d1      | 26.5  | 8.1  |      |      | 22.2  |      |      | 22.1 |      |      |      |      |
| Progression Factor     | 0.70  | 0.50 |      |      | 1.92  |      |      | 0.61 |      |      |      |      |
| Incremental Delay, d2  | 1.7   | 0.2  |      |      | 0.5   |      |      | 1.0  |      |      |      |      |
| Delay (s)              | 20.2  | 4.2  |      |      | 43.0  |      |      | 14.5 |      |      |      |      |
| Level of Service       | C     | A    |      |      | D     |      |      | B    |      |      |      |      |
| Approach Delay (s)     |       | 7.7  |      |      | 43.0  |      |      | 14.5 |      |      | 0.0  |      |
| Approach LOS           |       | A    |      |      | D     |      |      | B    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 20.4  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.45  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 76.7% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
5888: Capitol & 29th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL   | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|-------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑↑   |      | ↘     | ↑↑   |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      | 4.0   | 4.0  |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 0.95 |      | 1.00  | 0.95 |      |      |      |      |      | 0.91 |      |
| Frt                    |      | 0.94 |      | 1.00  | 1.00 |      |      |      |      |      | 0.99 |      |
| Flt Protected          |      | 1.00 |      | 0.95  | 1.00 |      |      |      |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 3150 |      | 1770  | 3539 |      |      |      |      |      | 4845 |      |
| Flt Permitted          |      | 1.00 |      | 0.32  | 1.00 |      |      |      |      |      | 1.00 |      |
| Satd. Flow (perm)      |      | 3150 |      | 599   | 3539 |      |      |      |      |      | 4845 |      |
| Volume (vph)           | 0    | 394  | 287  | 198   | 413  | 0    | 0    | 0    | 0    | 123  | 1562 | 133  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 394  | 287  | 198   | 413  | 0    | 0    | 0    | 0    | 123  | 1562 | 133  |
| RTOR Reduction (vph)   | 0    | 4    | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 11   | 0    |
| Lane Group Flow (vph)  | 0    | 677  | 0    | 198   | 413  | 0    | 0    | 0    | 0    | 0    | 1807 | 0    |
| Parking (#/hr)         |      | 0    | 0    |       |      |      |      |      |      |      | 0    | 0    |
| Turn Type              |      |      |      | Perm  |      |      |      |      |      |      | Perm |      |
| Protected Phases       |      | 4    |      |       | 8    |      |      |      |      |      |      | 6    |
| Permitted Phases       |      |      |      | 8     |      |      |      |      |      | 6    |      |      |
| Actuated Green, G (s)  |      | 38.0 |      | 38.0  | 38.0 |      |      |      |      |      | 36.0 |      |
| Effective Green, g (s) |      | 37.0 |      | 37.0  | 37.0 |      |      |      |      |      | 35.0 |      |
| Actuated g/C Ratio     |      | 0.46 |      | 0.46  | 0.46 |      |      |      |      |      | 0.44 |      |
| Clearance Time (s)     |      | 3.0  |      | 3.0   | 3.0  |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 1457 |      | 277   | 1637 |      |      |      |      |      | 2120 |      |
| v/s Ratio Prot         |      | 0.21 |      |       | 0.12 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      |      | c0.33 |      |      |      |      |      |      | 0.37 |      |
| v/c Ratio              |      | 0.46 |      | 0.71  | 0.25 |      |      |      |      |      | 0.85 |      |
| Uniform Delay, d1      |      | 14.7 |      | 17.3  | 13.1 |      |      |      |      |      | 20.2 |      |
| Progression Factor     |      | 0.87 |      | 0.42  | 0.24 |      |      |      |      |      | 0.47 |      |
| Incremental Delay, d2  |      | 0.2  |      | 13.6  | 0.3  |      |      |      |      |      | 3.9  |      |
| Delay (s)              |      | 13.0 |      | 20.9  | 3.5  |      |      |      |      |      | 13.4 |      |
| Level of Service       |      | B    |      | C     | A    |      |      |      |      |      | B    |      |
| Approach Delay (s)     |      | 13.0 |      |       | 9.1  |      |      | 0.0  |      |      | 13.4 |      |
| Approach LOS           |      | B    |      |       | A    |      |      | A    |      |      | B    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 12.4  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.78  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 76.7% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
5890: Capitol & 26th St

6/1/2005



| Movement                          | EBL   | EBT  | EBR                  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|-----------------------------------|-------|------|----------------------|------|-------|------|------|------|------|------|-------|------|
| Lane Configurations               | ↖     | ↗    |                      | ↖    | ↗     |      |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)                | 1900  | 1900 | 1900                 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)               | 4.0   | 4.0  |                      | 4.0  | 4.0   |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor                 | 1.00  | 1.00 |                      | 1.00 | 1.00  |      |      | 1.00 |      |      | 1.00  |      |
| Fr <sub>t</sub>                   | 1.00  | 1.00 |                      | 1.00 | 0.99  |      |      | 0.98 |      |      | 0.98  |      |
| Fl <sub>t</sub> Protected         | 0.95  | 1.00 |                      | 0.95 | 1.00  |      |      | 1.00 |      |      | 0.98  |      |
| Satd. Flow (prot)                 | 1770  | 1671 |                      | 1770 | 1668  |      |      | 1630 |      |      | 1623  |      |
| Fl <sub>t</sub> Permitted         | 0.29  | 1.00 |                      | 0.38 | 1.00  |      |      | 0.99 |      |      | 0.91  |      |
| Satd. Flow (perm)                 | 540   | 1671 |                      | 708  | 1668  |      |      | 1613 |      |      | 1498  |      |
| Volume (vph)                      | 11    | 531  | 12                   | 20   | 653   | 23   | 6    | 59   | 14   | 31   | 51    | 11   |
| Peak-hour factor, PHF             | 1.00  | 1.00 | 1.00                 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)                   | 11    | 531  | 12                   | 20   | 653   | 23   | 6    | 59   | 14   | 31   | 51    | 11   |
| RTOR Reduction (vph)              | 0     | 1    | 0                    | 0    | 2     | 0    | 0    | 10   | 0    | 0    | 8     | 0    |
| Lane Group Flow (vph)             | 11    | 542  | 0                    | 20   | 674   | 0    | 0    | 69   | 0    | 0    | 85    | 0    |
| Parking (#/hr)                    |       | 0    | 0                    |      | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Turn Type                         | Perm  |      | Perm                 |      | Perm  |      | Perm |      | Perm |      | Perm  |      |
| Protected Phases                  | 4     |      | 8                    |      | 8     |      | 2    |      | 6    |      | 6     |      |
| Permitted Phases                  | 4     |      | 8                    |      | 8     |      | 2    |      | 6    |      | 6     |      |
| Actuated Green, G (s)             | 37.0  | 37.0 |                      | 37.0 | 37.0  |      |      | 17.0 |      |      | 17.0  |      |
| Effective Green, g (s)            | 36.0  | 36.0 |                      | 36.0 | 36.0  |      |      | 16.0 |      |      | 16.0  |      |
| Actuated g/C Ratio                | 0.60  | 0.60 |                      | 0.60 | 0.60  |      |      | 0.27 |      |      | 0.27  |      |
| Clearance Time (s)                | 3.0   | 3.0  |                      | 3.0  | 3.0   |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)                | 324   | 1003 |                      | 425  | 1001  |      |      | 430  |      |      | 399   |      |
| v/s Ratio Prot                    |       | 0.32 |                      |      | c0.40 |      |      |      |      |      |       |      |
| v/s Ratio Perm                    | 0.02  |      |                      | 0.03 |       |      |      | 0.04 |      |      | c0.06 |      |
| v/c Ratio                         | 0.03  | 0.54 |                      | 0.05 | 0.67  |      |      | 0.16 |      |      | 0.21  |      |
| Uniform Delay, d <sub>1</sub>     | 4.9   | 7.1  |                      | 4.9  | 8.1   |      |      | 16.9 |      |      | 17.1  |      |
| Progression Factor                | 1.00  | 1.00 |                      | 1.00 | 1.00  |      |      | 1.00 |      |      | 0.66  |      |
| Incremental Delay, d <sub>2</sub> | 0.2   | 2.1  |                      | 0.2  | 3.6   |      |      | 0.8  |      |      | 1.2   |      |
| Delay (s)                         | 5.1   | 9.2  |                      | 5.1  | 11.7  |      |      | 17.6 |      |      | 12.5  |      |
| Level of Service                  | A     | A    |                      | A    | B     |      |      | B    |      |      | B     |      |
| Approach Delay (s)                |       | 9.1  |                      |      | 11.5  |      |      | 17.6 |      |      | 12.5  |      |
| Approach LOS                      |       | A    |                      |      | B     |      |      | B    |      |      | B     |      |
| <b>Intersection Summary</b>       |       |      |                      |      |       |      |      |      |      |      |       |      |
| HCM Average Control Delay         | 11.0  |      | HCM Level of Service |      | B     |      |      |      |      |      |       |      |
| HCM Volume to Capacity ratio      | 0.53  |      |                      |      |       |      |      |      |      |      |       |      |
| Actuated Cycle Length (s)         | 60.0  |      | Sum of lost time (s) |      | 8.0   |      |      |      |      |      |       |      |
| Intersection Capacity Utilization | 54.2% |      | ICU Level of Service |      | A     |      |      |      |      |      |       |      |
| Analysis Period (min)             | 15    |      |                      |      |       |      |      |      |      |      |       |      |
| c Critical Lane Group             |       |      |                      |      |       |      |      |      |      |      |       |      |

# HCM Signalized Intersection Capacity Analysis

6481: J Street & 28th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations    |      | ↕↕↕  |      |      |      |      |      | ↕     |      |      |      | ↕    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      |      |      |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor      |      | 0.91 |      |      |      |      |      | 1.00  |      |      | 1.00 |      |
| Fr't                   |      | 1.00 |      |      |      |      |      | 0.93  |      |      | 1.00 |      |
| Flt Protected          |      | 1.00 |      |      |      |      |      | 1.00  |      |      | 0.99 |      |
| Satd. Flow (prot)      |      | 4887 |      |      |      |      |      | 1552  |      |      | 1664 |      |
| Flt Permitted          |      | 1.00 |      |      |      |      |      | 1.00  |      |      | 0.95 |      |
| Satd. Flow (perm)      |      | 4887 |      |      |      |      |      | 1552  |      |      | 1593 |      |
| Volume (vph)           | 37   | 1924 | 66   | 0    | 0    | 0    | 0    | 174   | 212  | 9    | 53   | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 37   | 1924 | 66   | 0    | 0    | 0    | 0    | 174   | 212  | 9    | 53   | 0    |
| RTOR Reduction (vph)   | 0    | 4    | 0    | 0    | 0    | 0    | 0    | 4     | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 2023 | 0    | 0    | 0    | 0    | 0    | 382   | 0    | 0    | 62   | 0    |
| Parking (#/hr)         | 0    | 0    | 0    |      |      |      |      | 0     | 0    | 0    | 0    |      |
| Turn Type              | Perm |      |      |      |      |      | Perm |       |      |      |      |      |
| Protected Phases       |      | 4    |      |      |      |      |      | 2     |      |      | 6    |      |
| Permitted Phases       | 4    |      |      |      |      |      |      |       | 6    |      |      |      |
| Actuated Green, G (s)  |      | 43.0 |      |      |      |      |      | 31.0  |      |      | 31.0 |      |
| Effective Green, g (s) |      | 42.0 |      |      |      |      |      | 30.0  |      |      | 30.0 |      |
| Actuated g/C Ratio     |      | 0.52 |      |      |      |      |      | 0.38  |      |      | 0.38 |      |
| Clearance Time (s)     |      | 3.0  |      |      |      |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 2566 |      |      |      |      |      | 582   |      |      | 597  |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      | c0.25 |      |      |      |      |
| v/s Ratio Perm         |      | 0.41 |      |      |      |      |      |       |      |      | 0.04 |      |
| v/c Ratio              |      | 0.79 |      |      |      |      |      | 0.66  |      |      | 0.10 |      |
| Uniform Delay, d1      |      | 15.4 |      |      |      |      |      | 20.7  |      |      | 16.3 |      |
| Progression Factor     |      | 1.00 |      |      |      |      |      | 0.97  |      |      | 1.00 |      |
| Incremental Delay, d2  |      | 2.5  |      |      |      |      |      | 5.6   |      |      | 0.3  |      |
| Delay (s)              |      | 17.9 |      |      |      |      |      | 25.8  |      |      | 16.6 |      |
| Level of Service       |      | B    |      |      |      |      |      | C     |      |      | B    |      |
| Approach Delay (s)     |      | 17.9 |      |      | 0.0  |      |      | 25.8  |      |      | 16.6 |      |
| Approach LOS           |      | B    |      |      | A    |      |      | C     |      |      | B    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 19.1  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.73  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 68.2% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
6482: K Street & 28th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↖    | ↗    |      | ↖    | ↗    |      | ↖    | ↗    |      | ↖    | ↗    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  |      | 4.0  | 4.0  |      | 4.0  | 4.0  |      | 4.0  | 4.0  |
| Lane Util. Factor      |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |
| Frt                    |      | 1.00 | 0.85 |      | 1.00 | 0.85 |      | 1.00 | 0.85 |      | 1.00 | 0.85 |
| Flt Protected          |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 0.99 | 1.00 |      | 0.99 | 1.00 |
| Satd. Flow (prot)      |      | 1672 | 1425 |      | 1672 | 1425 |      | 1657 | 1425 |      | 1653 | 1425 |
| Flt Permitted          |      | 0.96 | 1.00 |      | 0.96 | 1.00 |      | 0.89 | 1.00 |      | 0.86 | 1.00 |
| Satd. Flow (perm)      |      | 1616 | 1425 |      | 1609 | 1425 |      | 1493 | 1425 |      | 1445 | 1425 |
| Volume (vph)           | 24   | 472  | 23   | 35   | 583  | 117  | 60   | 194  | 111  | 52   | 134  | 32   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 24   | 472  | 23   | 35   | 583  | 117  | 60   | 194  | 111  | 52   | 134  | 32   |
| RTOR Reduction (vph)   | 0    | 0    | 7    | 0    | 0    | 29   | 0    | 0    | 78   | 0    | 0    | 22   |
| Lane Group Flow (vph)  | 0    | 496  | 16   | 0    | 618  | 88   | 0    | 254  | 33   | 0    | 186  | 10   |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      | Perm | Perm |      | Perm | Perm |      | Perm | Perm |      | Perm |
| Protected Phases       |      | 4    |      |      | 8    |      |      | 2    |      |      | 6    |      |
| Permitted Phases       | 4    |      | 4    | 8    |      | 8    | 2    |      | 2    | 6    |      | 6    |
| Actuated Green, G (s)  |      | 49.0 | 49.0 |      | 49.0 | 49.0 |      | 25.0 | 25.0 |      | 25.0 | 25.0 |
| Effective Green, g (s) |      | 48.0 | 48.0 |      | 48.0 | 48.0 |      | 24.0 | 24.0 |      | 24.0 | 24.0 |
| Actuated g/C Ratio     |      | 0.60 | 0.60 |      | 0.60 | 0.60 |      | 0.30 | 0.30 |      | 0.30 | 0.30 |
| Clearance Time (s)     |      | 3.0  | 3.0  |      | 3.0  | 3.0  |      | 3.0  | 3.0  |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |      | 970  | 855  |      | 965  | 855  |      | 448  | 428  |      | 434  | 428  |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      | 0.31 | 0.01 |      | 0.38 | 0.06 |      | 0.17 | 0.02 |      | 0.13 | 0.01 |
| v/c Ratio              |      | 0.51 | 0.02 |      | 0.64 | 0.10 |      | 0.57 | 0.08 |      | 0.43 | 0.02 |
| Uniform Delay, d1      |      | 9.2  | 6.5  |      | 10.4 | 6.8  |      | 23.6 | 20.1 |      | 22.5 | 19.7 |
| Progression Factor     |      | 1.00 | 1.00 |      | 0.50 | 0.42 |      | 0.97 | 2.00 |      | 1.01 | 1.15 |
| Incremental Delay, d2  |      | 1.9  | 0.0  |      | 2.5  | 0.2  |      | 4.4  | 0.3  |      | 3.0  | 0.1  |
| Delay (s)              |      | 11.2 | 6.5  |      | 7.7  | 3.1  |      | 27.2 | 40.4 |      | 25.7 | 22.8 |
| Level of Service       |      | B    | A    |      | A    | A    |      | C    | D    |      | C    | C    |
| Approach Delay (s)     |      | 11.0 |      |      | 7.0  |      |      | 31.2 |      |      | 25.2 |      |
| Approach LOS           |      | B    |      |      | A    |      |      | C    |      |      | C    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 15.1  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.62  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 92.8% | ICU Level of Service | F   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
6483: L Street & 28th Street

6/1/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT  | WBR  | NBL  | NBT                  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|-------|------|------|------|------|----------------------|------|------|------|------|
| Lane Configurations               |      |      |       |      | ↔    |      |      | ↑                    |      |      | ↓    |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      |      |       |      | 4.0  |      |      | 4.0                  |      |      | 4.0  |      |
| Lane Util. Factor                 |      |      |       |      | 0.95 |      |      | 1.00                 |      |      | 1.00 |      |
| Frt                               |      |      |       |      | 0.98 |      |      | 1.00                 |      |      | 0.98 |      |
| Flt Protected                     |      |      |       |      | 0.99 |      |      | 0.99                 |      |      | 1.00 |      |
| Satd. Flow (prot)                 |      |      |       |      | 3258 |      |      | 1662                 |      |      | 1636 |      |
| Flt Permitted                     |      |      |       |      | 0.99 |      |      | 0.92                 |      |      | 1.00 |      |
| Satd. Flow (perm)                 |      |      |       |      | 3258 |      |      | 1545                 |      |      | 1636 |      |
| Volume (vph)                      | 0    | 0    | 0     | 152  | 610  | 137  | 57   | 275                  | 0    | 0    | 160  | 35   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 152  | 610  | 137  | 57   | 275                  | 0    | 0    | 160  | 35   |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 0    | 18   | 0    | 0    | 0                    | 0    | 0    | 10   | 0    |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 0    | 881  | 0    | 0    | 332                  | 0    | 0    | 185  | 0    |
| Parking (#/hr)                    | 0    | 0    | 0     | 0    | 0    | 0    | 0    | 0                    | 0    | 0    | 0    | 0    |
| Turn Type                         |      |      |       | Perm |      | Perm |      |                      |      |      |      |      |
| Protected Phases                  |      |      |       |      | 6    |      |      | 8                    |      |      |      | 4    |
| Permitted Phases                  |      |      |       | 6    |      |      | 8    |                      |      |      |      |      |
| Actuated Green, G (s)             |      |      |       |      | 39.0 |      |      | 35.0                 |      |      |      | 35.0 |
| Effective Green, g (s)            |      |      |       |      | 38.0 |      |      | 34.0                 |      |      |      | 34.0 |
| Actuated g/C Ratio                |      |      |       |      | 0.48 |      |      | 0.42                 |      |      |      | 0.42 |
| Clearance Time (s)                |      |      |       |      | 3.0  |      |      | 3.0                  |      |      |      | 3.0  |
| Lane Grp Cap (vph)                |      |      |       |      | 1548 |      |      | 657                  |      |      |      | 695  |
| v/s Ratio Prot                    |      |      |       |      |      |      |      |                      |      |      |      | 0.11 |
| v/s Ratio Perm                    |      |      |       |      | 0.27 |      |      | c0.21                |      |      |      |      |
| v/c Ratio                         |      |      |       |      | 0.57 |      |      | 0.51                 |      |      |      | 0.27 |
| Uniform Delay, d1                 |      |      |       |      | 15.1 |      |      | 16.8                 |      |      |      | 14.9 |
| Progression Factor                |      |      |       |      | 0.55 |      |      | 0.80                 |      |      |      | 0.46 |
| Incremental Delay, d2             |      |      |       |      | 1.5  |      |      | 1.6                  |      |      |      | 0.9  |
| Delay (s)                         |      |      |       |      | 9.8  |      |      | 15.0                 |      |      |      | 7.7  |
| Level of Service                  |      |      |       |      | A    |      |      | B                    |      |      |      | A    |
| Approach Delay (s)                |      | 0.0  |       |      | 9.8  |      |      | 15.0                 |      |      |      | 7.7  |
| Approach LOS                      |      | A    |       |      | A    |      |      | B                    |      |      |      | A    |
| <b>Intersection Summary</b>       |      |      |       |      |      |      |      |                      |      |      |      |      |
| HCM Average Control Delay         |      |      | 10.7  |      |      |      |      | HCM Level of Service |      |      |      | B    |
| HCM Volume to Capacity ratio      |      |      | 0.54  |      |      |      |      |                      |      |      |      |      |
| Actuated Cycle Length (s)         |      |      | 80.0  |      |      |      |      | Sum of lost time (s) |      |      | 8.0  |      |
| Intersection Capacity Utilization |      |      | 63.8% |      |      |      |      | ICU Level of Service |      |      |      | B    |
| Analysis Period (min)             |      |      | 15    |      |      |      |      |                      |      |      |      |      |
| c Critical Lane Group             |      |      |       |      |      |      |      |                      |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
6484: Capitol & 28th Street

6/1/2005



| Movement                          | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|-------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations               |      | ↔     |      | ↖    | ↗    |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0   |      | 4.0  | 4.0  |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor                 |      | 1.00  |      | 1.00 | 1.00 |      |      | 1.00  |      |      | 1.00 |      |
| Fr <sub>t</sub>                   |      | 0.98  |      | 1.00 | 0.99 |      |      | 0.95  |      |      | 1.00 |      |
| Fl <sub>t</sub> Protected         |      | 1.00  |      | 0.95 | 1.00 |      |      | 0.98  |      |      | 0.99 |      |
| Satd. Flow (prot)                 |      | 1636  |      | 1770 | 1656 |      |      | 1569  |      |      | 1647 |      |
| Fl <sub>t</sub> Permitted         |      | 0.89  |      | 0.27 | 1.00 |      |      | 0.73  |      |      | 0.73 |      |
| Satd. Flow (perm)                 |      | 1467  |      | 506  | 1656 |      |      | 1167  |      |      | 1221 |      |
| Volume (vph)                      | 23   | 510   | 105  | 61   | 528  | 47   | 235  | 186   | 228  | 97   | 225  | 8    |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 23   | 510   | 105  | 61   | 528  | 47   | 235  | 186   | 228  | 97   | 225  | 8    |
| RTOR Reduction (vph)              | 0    | 9     | 0    | 0    | 4    | 0    | 0    | 25    | 0    | 0    | 1    | 0    |
| Lane Group Flow (vph)             | 0    | 629   | 0    | 61   | 571  | 0    | 0    | 624   | 0    | 0    | 329  | 0    |
| Parking (#/hr)                    | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type                         | Perm |       |      | Perm |      |      | Perm |       |      | Perm |      |      |
| Protected Phases                  |      | 4     |      |      | 8    |      |      | 2     |      |      | 6    |      |
| Permitted Phases                  | 4    |       |      | 8    |      |      | 2    |       |      | 6    |      |      |
| Actuated Green, G (s)             |      | 34.0  |      | 34.0 | 34.0 |      |      | 40.0  |      |      | 40.0 |      |
| Effective Green, g (s)            |      | 33.0  |      | 33.0 | 33.0 |      |      | 39.0  |      |      | 39.0 |      |
| Actuated g/C Ratio                |      | 0.41  |      | 0.41 | 0.41 |      |      | 0.49  |      |      | 0.49 |      |
| Clearance Time (s)                |      | 3.0   |      | 3.0  | 3.0  |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |      | 605   |      | 209  | 683  |      |      | 569   |      |      | 595  |      |
| v/s Ratio Prot                    |      |       |      |      | 0.34 |      |      |       |      |      |      |      |
| v/s Ratio Perm                    |      | c0.43 |      | 0.12 |      |      |      | c0.54 |      |      | 0.27 |      |
| v/c Ratio                         |      | 1.04  |      | 0.29 | 0.84 |      |      | 1.10  |      |      | 0.55 |      |
| Uniform Delay, d <sub>1</sub>     |      | 23.5  |      | 15.7 | 21.1 |      |      | 20.5  |      |      | 14.4 |      |
| Progression Factor                |      | 1.00  |      | 0.41 | 0.42 |      |      | 0.58  |      |      | 0.72 |      |
| Incremental Delay, d <sub>2</sub> |      | 47.4  |      | 3.4  | 11.1 |      |      | 65.2  |      |      | 3.4  |      |
| Delay (s)                         |      | 70.9  |      | 9.8  | 20.0 |      |      | 77.0  |      |      | 13.7 |      |
| Level of Service                  |      | E     |      | A    | B    |      |      | E     |      |      | B    |      |
| Approach Delay (s)                |      | 70.9  |      |      | 19.0 |      |      | 77.0  |      |      | 13.7 |      |
| Approach LOS                      |      | E     |      |      | B    |      |      | E     |      |      | B    |      |

| Intersection Summary              |        |                      |     |
|-----------------------------------|--------|----------------------|-----|
| HCM Average Control Delay         | 49.6   | HCM Level of Service | D   |
| HCM Volume to Capacity ratio      | 1.07   |                      |     |
| Actuated Cycle Length (s)         | 80.0   | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 111.8% | ICU Level of Service | H   |
| Analysis Period (min)             | 15     |                      |     |
| c Critical Lane Group             |        |                      |     |

HCM Signalized Intersection Capacity Analysis  
6485: N Street & 28th Street

6/1/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|-------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations    |      | ↔     |      |      | ↕    |      |      | ↗    |      |      | ↖     |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      | 4.0  |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor      |      | 0.95  |      |      | 1.00 |      |      | 1.00 |      |      | 1.00  |      |
| Frt                    |      | 1.00  |      |      | 0.89 |      |      | 0.96 |      |      | 1.00  |      |
| Flt Protected          |      | 0.99  |      |      | 0.99 |      |      | 1.00 |      |      | 0.96  |      |
| Satd. Flow (prot)      |      | 3328  |      |      | 1473 |      |      | 1613 |      |      | 1616  |      |
| Flt Permitted          |      | 0.82  |      |      | 0.68 |      |      | 1.00 |      |      | 0.65  |      |
| Satd. Flow (perm)      |      | 2739  |      |      | 1012 |      |      | 1613 |      |      | 1087  |      |
| Volume (vph)           | 99   | 728   | 26   | 55   | 0    | 307  | 0    | 141  | 55   | 343  | 114   | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 99   | 728   | 26   | 55   | 0    | 307  | 0    | 141  | 55   | 343  | 114   | 0    |
| RTOR Reduction (vph)   | 0    | 3     | 0    | 0    | 192  | 0    | 0    | 18   | 0    | 0    | 0     | 0    |
| Lane Group Flow (vph)  | 0    | 851   |      | 0    | 0    | 170  | 0    | 0    | 178  | 0    | 0     | 457  |
| Parking (#/hr)         | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Turn Type              | Perm |       |      | Perm |      |      |      |      |      | Perm |       |      |
| Protected Phases       |      | 2     |      |      | 6    |      |      | 8    |      |      | 4     |      |
| Permitted Phases       | 2    |       |      | 6    |      |      |      |      |      | 4    |       |      |
| Actuated Green, G (s)  |      | 31.0  |      |      | 31.0 |      |      | 43.0 |      |      | 43.0  |      |
| Effective Green, g (s) |      | 30.0  |      |      | 30.0 |      |      | 42.0 |      |      | 42.0  |      |
| Actuated g/C Ratio     |      | 0.38  |      |      | 0.38 |      |      | 0.52 |      |      | 0.52  |      |
| Clearance Time (s)     |      | 3.0   |      |      | 3.0  |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)     |      | 1027  |      |      | 380  |      |      | 847  |      |      | 571   |      |
| v/s Ratio Prot         |      |       |      |      |      |      |      | 0.11 |      |      |       |      |
| v/s Ratio Perm         |      | c0.31 |      |      | 0.17 |      |      |      |      |      | c0.42 |      |
| v/c Ratio              |      | 0.83  |      |      | 0.45 |      |      | 0.21 |      |      | 0.80  |      |
| Uniform Delay, d1      |      | 22.7  |      |      | 18.8 |      |      | 10.1 |      |      | 15.6  |      |
| Progression Factor     |      | 1.00  |      |      | 2.93 |      |      | 1.00 |      |      | 1.06  |      |
| Incremental Delay, d2  |      | 7.7   |      |      | 1.9  |      |      | 0.6  |      |      | 9.6   |      |
| Delay (s)              |      | 30.3  |      |      | 57.0 |      |      | 10.7 |      |      | 26.1  |      |
| Level of Service       |      | C     |      |      | E    |      |      | B    |      |      | C     |      |
| Approach Delay (s)     |      | 30.3  |      |      | 57.0 |      |      | 10.7 |      |      | 26.1  |      |
| Approach LOS           |      | C     |      |      | E    |      |      | B    |      |      | C     |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 32.4  | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 0.81  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 94.9% | ICU Level of Service | F   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
6511: K Street & Alhambra

6/1/2005



| Movement               | EBL  | EBT  | EBR   | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|------|-------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations    |      | ↕    | ↗     |      | ↕    |      |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0   |      | 4.0  |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor      |      | 1.00 | 1.00  |      | 1.00 |      |      | 0.95 |      |      | 0.95  |      |
| Frt                    |      | 1.00 | 0.85  |      | 0.99 |      |      | 0.98 |      |      | 0.95  |      |
| Flt Protected          |      | 0.98 | 1.00  |      | 0.99 |      |      | 0.99 |      |      | 1.00  |      |
| Satd. Flow (prot)      |      | 1821 | 1583  |      | 1816 |      |      | 3422 |      |      | 3350  |      |
| Flt Permitted          |      | 0.82 | 1.00  |      | 0.91 |      |      | 0.58 |      |      | 0.95  |      |
| Satd. Flow (perm)      |      | 1529 | 1583  |      | 1668 |      |      | 2021 |      |      | 3182  |      |
| Volume (vph)           | 71   | 83   | 281   | 39   | 97   | 14   | 111  | 349  | 85   | 12   | 759   | 421  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 71   | 83   | 281   | 39   | 97   | 14   | 111  | 349  | 85   | 12   | 759   | 421  |
| RTOR Reduction (vph)   | 0    | 0    | 116   | 0    | 5    | 0    | 0    | 19   | 0    | 0    | 92    | 0    |
| Lane Group Flow (vph)  | 0    | 154  | 165   | 0    | 145  | 0    | 0    | 526  | 0    | 0    | 1100  | 0    |
| Turn Type              | Perm |      | Perm  | Perm |      |      | Perm |      |      | Perm |       |      |
| Protected Phases       |      | 4    |       |      | 8    |      |      | 2    |      |      |       | 6    |
| Permitted Phases       | 4    |      | 4     | 8    |      |      | 2    |      |      | 6    |       |      |
| Actuated Green, G (s)  |      | 29.0 | 29.0  |      | 29.0 |      |      | 45.0 |      |      | 45.0  |      |
| Effective Green, g (s) |      | 28.0 | 28.0  |      | 28.0 |      |      | 44.0 |      |      | 44.0  |      |
| Actuated g/C Ratio     |      | 0.35 | 0.35  |      | 0.35 |      |      | 0.55 |      |      | 0.55  |      |
| Clearance Time (s)     |      | 3.0  | 3.0   |      | 3.0  |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)     |      | 535  | 554   |      | 584  |      |      | 1112 |      |      | 1750  |      |
| v/s Ratio Prot         |      |      |       |      |      |      |      |      |      |      |       |      |
| v/s Ratio Perm         |      | 0.10 | c0.10 |      | 0.09 |      |      | 0.26 |      |      | c0.35 |      |
| v/c Ratio              |      | 0.29 | 0.30  |      | 0.25 |      |      | 0.47 |      |      | 0.63  |      |
| Uniform Delay, d1      |      | 18.8 | 18.9  |      | 18.5 |      |      | 10.9 |      |      | 12.4  |      |
| Progression Factor     |      | 1.20 | 1.70  |      | 1.00 |      |      | 1.29 |      |      | 0.64  |      |
| Incremental Delay, d2  |      | 1.3  | 1.3   |      | 1.0  |      |      | 0.1  |      |      | 0.9   |      |
| Delay (s)              |      | 23.9 | 33.3  |      | 19.5 |      |      | 14.2 |      |      | 8.8   |      |
| Level of Service       |      | C    | C     |      | B    |      |      | B    |      |      | A     |      |
| Approach Delay (s)     |      | 30.0 |       |      | 19.5 |      |      | 14.2 |      |      | 8.8   |      |
| Approach LOS           |      | C    |       |      | B    |      |      | B    |      |      | A     |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 14.7  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.50  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 75.2% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 9622: K Street & 30th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    | ↙    | ↑    |      |      | ↑     | ↗    |      | ↔↔↔  |      |      |      |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0  | 4.0  |      |      | 4.0   | 4.0  |      | 4.0  |      |      |      |      |
| Lane Util. Factor      | 1.00 | 1.00 |      |      | 1.00  | 1.00 |      | 0.91 |      |      |      |      |
| Flt                    | 1.00 | 1.00 |      |      | 1.00  | 0.85 |      | 0.98 |      |      |      |      |
| Flt Protected          | 0.95 | 1.00 |      |      | 1.00  | 1.00 |      | 0.99 |      |      |      |      |
| Satd. Flow (prot)      | 1770 | 1863 |      |      | 1863  | 1583 |      | 4950 |      |      |      |      |
| Flt Permitted          | 0.30 | 1.00 |      |      | 1.00  | 1.00 |      | 0.99 |      |      |      |      |
| Satd. Flow (perm)      | 550  | 1863 |      |      | 1863  | 1583 |      | 4950 |      |      |      |      |
| Volume (vph)           | 110  | 244  | 0    | 0    | 593   | 37   | 178  | 788  | 138  | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 110  | 244  | 0    | 0    | 593   | 37   | 178  | 788  | 138  | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 0     | 14   | 0    | 24   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 110  | 244  | 0    | 0    | 593   | 23   | 0    | 1080 | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      |      |      |       | Perm | Perm |      |      |      |      |      |
| Protected Phases       |      | 4    |      |      | 8     |      |      | 2    |      |      |      |      |
| Permitted Phases       | 4    |      |      |      |       | 8    | 2    |      |      |      |      |      |
| Actuated Green, G (s)  | 44.0 | 44.0 |      |      | 44.0  | 44.0 |      | 30.0 |      |      |      |      |
| Effective Green, g (s) | 43.0 | 43.0 |      |      | 43.0  | 43.0 |      | 29.0 |      |      |      |      |
| Actuated g/C Ratio     | 0.54 | 0.54 |      |      | 0.54  | 0.54 |      | 0.36 |      |      |      |      |
| Clearance Time (s)     | 3.0  | 3.0  |      |      | 3.0   | 3.0  |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)     | 296  | 1001 |      |      | 1001  | 851  |      | 1794 |      |      |      |      |
| v/s Ratio Prot         |      | 0.13 |      |      | c0.32 |      |      |      |      |      |      |      |
| v/s Ratio Perm         | 0.20 |      |      |      |       | 0.01 |      | 0.22 |      |      |      |      |
| v/c Ratio              | 0.37 | 0.24 |      |      | 0.59  | 0.03 |      | 0.60 |      |      |      |      |
| Uniform Delay, d1      | 10.7 | 9.8  |      |      | 12.6  | 8.7  |      | 20.8 |      |      |      |      |
| Progression Factor     | 0.90 | 0.80 |      |      | 0.65  | 0.71 |      | 0.44 |      |      |      |      |
| Incremental Delay, d2  | 3.2  | 0.5  |      |      | 2.2   | 0.0  |      | 1.3  |      |      |      |      |
| Delay (s)              | 12.8 | 8.4  |      |      | 10.3  | 6.2  |      | 10.6 |      |      |      |      |
| Level of Service       | B    | A    |      |      | B     | A    |      | B    |      |      |      |      |
| Approach Delay (s)     |      | 9.8  |      |      | 10.1  |      |      | 10.6 |      |      | 0.0  |      |
| Approach LOS           |      | A    |      |      | B     |      |      | B    |      |      | A    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.3  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.60  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 69.4% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

CUMULATIVE NO PROJECT  
WITH CENTRAL CITY TWO WAY CONVERSION

AM Peak Hour

Signalized Intersections

(am10)



HCM Signalized Intersection Capacity Analysis  
 2004: L Street & 21th Street

4/4/2005



| Movement                  | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------------|------|-------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations       |      | ↕     |      |      | ↗    |      |      | ↕↗   |      |      |      |      |
| Ideal Flow (vphpl)        | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |      | 4.0   |      |      | 4.0  |      |      | 4.0  |      |      |      |      |
| Lane Util. Factor         |      | 1.00  |      |      | 1.00 |      |      | 0.95 |      |      |      |      |
| Fr <sub>t</sub>           |      | 1.00  |      |      | 0.98 |      |      | 0.99 |      |      |      |      |
| Fl <sub>t</sub> Protected |      | 0.99  |      |      | 1.00 |      |      | 1.00 |      |      |      |      |
| Satd. Flow (prot)         |      | 1665  |      |      | 1644 |      |      | 3329 |      |      |      |      |
| Fl <sub>t</sub> Permitted |      | 0.90  |      |      | 1.00 |      |      | 1.00 |      |      |      |      |
| Satd. Flow (perm)         |      | 1501  |      |      | 1644 |      |      | 3329 |      |      |      |      |
| Volume (vph)              | 48   | 312   | 0    | 0    | 335  | 57   | 132  | 1224 | 49   | 0    | 0    | 0    |
| Peak-hour factor, PHF     | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 48   | 312   | 0    | 0    | 335  | 57   | 132  | 1224 | 49   | 0    | 0    | 0    |
| RTOR Reduction (vph)      | 0    | 0     | 0    | 0    | 10   | 0    | 0    | 4    | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)     | 0    | 360   |      | 0    | 382  |      | 0    | 1401 |      | 0    | 0    | 0    |
| Parking (#/hr)            | 0    | 0     |      |      | 0    |      | 0    | 0    |      | 0    |      |      |
| Turn Type                 | Perm |       |      |      |      |      | Perm |      |      |      |      |      |
| Protected Phases          |      | 2     |      |      | 6    |      |      | 8    |      |      |      |      |
| Permitted Phases          | 2    |       |      |      |      |      | 8    |      | 8    |      |      |      |
| Actuated Green, G (s)     |      | 22.0  |      |      | 22.0 |      |      | 32.0 |      |      |      |      |
| Effective Green, g (s)    |      | 21.0  |      |      | 21.0 |      |      | 31.0 |      |      |      |      |
| Actuated g/C Ratio        |      | 0.35  |      |      | 0.35 |      |      | 0.52 |      |      |      |      |
| Clearance Time (s)        |      | 3.0   |      |      | 3.0  |      |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)        |      | 525   |      |      | 575  |      |      | 1720 |      |      |      |      |
| v/s Ratio Prot            |      |       |      |      | 0.23 |      |      |      |      |      |      |      |
| v/s Ratio Perm            |      | c0.24 |      |      |      |      |      | 0.42 |      |      |      |      |
| v/c Ratio                 |      | 0.69  |      |      | 0.66 |      |      | 0.81 |      |      |      |      |
| Uniform Delay, d1         |      | 16.7  |      |      | 16.5 |      |      | 12.1 |      |      |      |      |
| Progression Factor        |      | 0.36  |      |      | 0.88 |      |      | 1.00 |      |      |      |      |
| Incremental Delay, d2     |      | 6.5   |      |      | 5.4  |      |      | 4.4  |      |      |      |      |
| Delay (s)                 |      | 12.5  |      |      | 20.0 |      |      | 16.5 |      |      |      |      |
| Level of Service          |      | B     |      |      | C    |      |      | B    |      |      |      |      |
| Approach Delay (s)        |      | 12.5  |      |      | 20.0 |      |      | 16.5 |      |      | 0.0  |      |
| Approach LOS              |      | B     |      |      | C    |      |      | B    |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 16.5  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.76  |                      |     |
| Actuated Cycle Length (s)         | 60.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 89.4% | ICU Level of Service | E   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 2012: J Street & 21th Street

4/4/2005



| Movement                          | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT                   | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|-------|------|------|------|------|------|-----------------------|------|------|------|------|
| Lane Configurations               |      | ↑↑↑   |      |      |      |      |      | ↑↑                    |      |      |      |      |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900                  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0   |      |      |      |      |      | 4.0                   |      |      |      |      |
| Lane Util. Factor                 |      | 0.91  |      |      |      |      |      | 0.95                  |      |      |      |      |
| Fr <sub>t</sub>                   |      | 1.00  |      |      |      |      |      | 0.98                  |      |      |      |      |
| Fl <sub>t</sub> Protected         |      | 1.00  |      |      |      |      |      | 1.00                  |      |      |      |      |
| Satd. Flow (prot)                 |      | 4915  |      |      |      |      |      | 3284                  |      |      |      |      |
| Fl <sub>t</sub> Permitted         |      | 1.00  |      |      |      |      |      | 1.00                  |      |      |      |      |
| Satd. Flow (perm)                 |      | 4915  |      |      |      |      |      | 3284                  |      |      |      |      |
| Volume (vph)                      | 5    | 1052  | 0    | 0    | 0    | 0    | 0    | 1108                  | 203  | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00                  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 5    | 1052  | 0    | 0    | 0    | 0    | 0    | 1108                  | 203  | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0    | 1     | 0    | 0    | 0    | 0    | 0    | 4                     | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 0    | 1056  | 0    | 0    | 0    | 0    | 0    | 1307                  | 0    | 0    | 0    | 0    |
| Parking (#/hr)                    | 0    | 0     |      |      |      |      |      | 0                     | 0    |      |      |      |
| Turn Type                         |      | Perm  |      |      |      |      |      |                       |      |      |      |      |
| Protected Phases                  |      |       | 4    |      |      |      |      | 2                     |      |      |      |      |
| Permitted Phases                  |      | 4     |      |      |      |      |      |                       |      |      |      |      |
| Actuated Green, G (s)             |      | 19.0  |      |      |      |      |      | 35.0                  |      |      |      |      |
| Effective Green, g (s)            |      | 18.0  |      |      |      |      |      | 34.0                  |      |      |      |      |
| Actuated g/C Ratio                |      | 0.30  |      |      |      |      |      | 0.57                  |      |      |      |      |
| Clearance Time (s)                |      | 3.0   |      |      |      |      |      | 3.0                   |      |      |      |      |
| Lane Grp Cap (vph)                |      | 1475  |      |      |      |      |      | 1861                  |      |      |      |      |
| v/s Ratio Prot                    |      |       |      |      |      |      |      | c0.40                 |      |      |      |      |
| v/s Ratio Perm                    |      | 0.21  |      |      |      |      |      |                       |      |      |      |      |
| v/c Ratio                         |      | 0.72  |      |      |      |      |      | 0.70                  |      |      |      |      |
| Uniform Delay, d <sub>1</sub>     |      | 18.7  |      |      |      |      |      | 9.4                   |      |      |      |      |
| Progression Factor                |      | 0.60  |      |      |      |      |      | 0.15                  |      |      |      |      |
| Incremental Delay, d <sub>2</sub> |      | 2.6   |      |      |      |      |      | 1.3                   |      |      |      |      |
| Delay (s)                         |      | 13.9  |      |      |      |      |      | 2.7                   |      |      |      |      |
| Level of Service                  |      | B     |      |      |      |      |      | A                     |      |      |      |      |
| Approach Delay (s)                |      | 13.9  |      |      | 0.0  |      |      | 2.7                   |      |      | 0.0  |      |
| Approach LOS                      |      | B     |      |      | A    |      |      | A                     |      |      | A    |      |
| <b>Intersection Summary</b>       |      |       |      |      |      |      |      |                       |      |      |      |      |
| HCM Average Control Delay         |      | 7.7   |      |      |      |      |      | HCM Level of Service  |      | A    |      |      |
| HCM Volume to Capacity ratio      |      | 0.71  |      |      |      |      |      | Sum of lost time (s)  |      | 8.0  |      |      |
| Actuated Cycle Length (s)         |      | 60.0  |      |      |      |      |      | ICU Level of Service  |      | C    |      |      |
| Intersection Capacity Utilization |      | 64.2% |      |      |      |      |      | Analysis Period (min) |      | 15   |      |      |
| c Critical Lane Group             |      |       |      |      |      |      |      |                       |      |      |      |      |

# HCM Signalized Intersection Capacity Analysis

2074: J Street & 19th Street

4/4/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|-------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑↑↑   |      |      |      |      |      |      |      |      | ↑↑   |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      |      |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 0.91  |      |      |      |      |      |      |      |      | 0.95 |      |
| Frt                    |      | 0.97  |      |      |      |      |      |      |      |      | 1.00 |      |
| Flt Protected          |      | 1.00  |      |      |      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (prot)      |      | 4745  |      |      |      |      |      |      |      |      | 3313 |      |
| Flt Permitted          |      | 1.00  |      |      |      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (perm)      |      | 4745  |      |      |      |      |      |      |      |      | 3313 |      |
| Volume (vph)           | 0    | 1044  | 314  | 0    | 0    | 0    | 0    | 0    | 0    | 109  | 256  | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 1044  | 314  | 0    | 0    | 0    | 0    | 0    | 0    | 109  | 256  | 0    |
| RTOR Reduction (vph)   | 0    | 91    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 42   | 0    |
| Lane Group Flow (vph)  | 0    | 1268  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 323  | 0    |
| Parking (#/hr)         |      | 0     | 0    |      |      |      |      |      |      | 0    | 0    |      |
| Turn Type              |      |       |      |      |      |      |      |      |      | Perm |      |      |
| Protected Phases       |      | 4     |      |      |      |      |      |      |      |      | 6    |      |
| Permitted Phases       |      |       |      |      |      |      |      |      |      | 6    |      |      |
| Actuated Green, G (s)  |      | 31.0  |      |      |      |      |      |      |      |      | 23.0 |      |
| Effective Green, g (s) |      | 30.0  |      |      |      |      |      |      |      |      | 22.0 |      |
| Actuated g/C Ratio     |      | 0.50  |      |      |      |      |      |      |      |      | 0.37 |      |
| Clearance Time (s)     |      | 3.0   |      |      |      |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 2373  |      |      |      |      |      |      |      |      | 1215 |      |
| v/s Ratio Prot         |      | c0.27 |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |       |      |      |      |      |      |      |      |      | 0.10 |      |
| v/c Ratio              |      | 0.53  |      |      |      |      |      |      |      |      | 0.27 |      |
| Uniform Delay, d1      |      | 10.2  |      |      |      |      |      |      |      |      | 13.3 |      |
| Progression Factor     |      | 1.00  |      |      |      |      |      |      |      |      | 1.00 |      |
| Incremental Delay, d2  |      | 0.9   |      |      |      |      |      |      |      |      | 0.5  |      |
| Delay (s)              |      | 11.1  |      |      |      |      |      |      |      |      | 13.9 |      |
| Level of Service       |      | B     |      |      |      |      |      |      |      |      | B    |      |
| Approach Delay (s)     |      | 11.1  |      |      | 0.0  |      |      | 0.0  |      |      | 13.9 |      |
| Approach LOS           |      | B     |      |      | A    |      |      | A    |      |      | B    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.7  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.42  |                      |     |
| Actuated Cycle Length (s)         | 60.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 44.1% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 2088: L Street & 29th Street

4/4/2005



| Movement                          | EBL  | EBT  | EBR    | WBL  | WBT   | WBR                  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|-----------------------------------|------|------|--------|------|-------|----------------------|------|------|------|------|-------|------|
| Lane Configurations               |      |      | ↗      | ↖    | ↑     |                      |      |      |      |      | ↑↑↑   |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900   | 1900 | 1900  | 1900                 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)               |      |      | 4.0    | 4.0  | 4.0   |                      |      |      |      |      | 4.0   |      |
| Lane Util. Factor                 |      |      | 1.00   | 1.00 | 1.00  |                      |      |      |      |      | 0.91  |      |
| Frt                               |      |      | 0.86   | 1.00 | 1.00  |                      |      |      |      |      | 0.98  |      |
| Flt Protected                     |      |      | 1.00   | 0.95 | 1.00  |                      |      |      |      |      | 1.00  |      |
| Satd. Flow (prot)                 |      |      | 1450   | 1770 | 1863  |                      |      |      |      |      | 4826  |      |
| Flt Permitted                     |      |      | 1.00   | 0.95 | 1.00  |                      |      |      |      |      | 1.00  |      |
| Satd. Flow (perm)                 |      |      | 1450   | 1770 | 1863  |                      |      |      |      |      | 4826  |      |
| Volume (vph)                      | 0    | 0    | 297    | 156  | 583   | 0                    | 0    | 0    | 0    | 0    | 997   | 138  |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00   | 1.00 | 1.00  | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 297    | 156  | 583   | 0                    | 0    | 0    | 0    | 0    | 997   | 138  |
| RTOR Reduction (vph)              | 0    | 0    | 12     | 12   | 0     | 0                    | 0    | 0    | 0    | 0    | 22    | 0    |
| Lane Group Flow (vph)             | 0    | 0    | 285    | 144  | 583   | 0                    | 0    | 0    | 0    | 0    | 1113  | 0    |
| Parking (#/hr)                    |      |      | 0      |      |       |                      |      |      |      |      | 0     | 0    |
| Turn Type                         |      |      | custom | Perm |       |                      |      |      |      |      |       |      |
| Protected Phases                  |      |      |        |      | 8     |                      |      |      |      |      | 6     |      |
| Permitted Phases                  |      |      | 4      | 8    |       |                      |      |      |      |      |       |      |
| Actuated Green, G (s)             |      |      | 44.0   | 44.0 | 44.0  |                      |      |      |      |      | 30.0  |      |
| Effective Green, g (s)            |      |      | 43.0   | 43.0 | 43.0  |                      |      |      |      |      | 29.0  |      |
| Actuated g/C Ratio                |      |      | 0.54   | 0.54 | 0.54  |                      |      |      |      |      | 0.36  |      |
| Clearance Time (s)                |      |      | 3.0    | 3.0  | 3.0   |                      |      |      |      |      | 3.0   |      |
| Lane Grp Cap (vph)                |      |      | 779    | 951  | 1001  |                      |      |      |      |      | 1749  |      |
| v/s Ratio Prot                    |      |      |        |      | c0.31 |                      |      |      |      |      | c0.23 |      |
| v/s Ratio Perm                    |      |      | 0.20   | 0.08 |       |                      |      |      |      |      |       |      |
| v/c Ratio                         |      |      | 0.37   | 0.15 | 0.58  |                      |      |      |      |      | 0.64  |      |
| Uniform Delay, d1                 |      |      | 10.7   | 9.3  | 12.5  |                      |      |      |      |      | 21.1  |      |
| Progression Factor                |      |      | 0.30   | 0.54 | 0.57  |                      |      |      |      |      | 0.60  |      |
| Incremental Delay, d2             |      |      | 1.2    | 0.3  | 2.4   |                      |      |      |      |      | 1.6   |      |
| Delay (s)                         |      |      | 4.4    | 5.4  | 9.5   |                      |      |      |      |      | 14.3  |      |
| Level of Service                  |      |      | A      | A    | A     |                      |      |      |      |      | B     |      |
| Approach Delay (s)                |      | 4.4  |        |      | 8.6   |                      |      | 0.0  |      |      | 14.3  |      |
| Approach LOS                      |      | A    |        |      | A     |                      |      | A    |      |      | B     |      |
| <b>Intersection Summary</b>       |      |      |        |      |       |                      |      |      |      |      |       |      |
| HCM Average Control Delay         |      |      | 11.0   |      |       | HCM Level of Service |      |      |      |      | B     |      |
| HCM Volume to Capacity ratio      |      |      | 0.60   |      |       |                      |      |      |      |      |       |      |
| Actuated Cycle Length (s)         |      |      | 80.0   |      |       | Sum of lost time (s) |      |      |      | 8.0  |       |      |
| Intersection Capacity Utilization |      |      | 59.7%  |      |       | ICU Level of Service |      |      |      |      | B     |      |
| Analysis Period (min)             |      |      | 15     |      |       |                      |      |      |      |      |       |      |
| c Critical Lane Group             |      |      |        |      |       |                      |      |      |      |      |       |      |



HCM Signalized Intersection Capacity Analysis  
 2239: L Street & Alhambra

4/4/2005



| Movement                          | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations               |      |      |      |      | ↕    |      |      | ↕    |      |      | ↕    | ↕    |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      |      |      |      | 4.0  |      |      | 4.0  |      |      | 4.0  | 4.0  |
| Lane Util. Factor                 |      |      |      |      | 1.00 |      |      | 1.00 |      |      | 1.00 | 1.00 |
| Fr <sub>t</sub>                   |      |      |      |      | 0.98 |      |      | 0.96 |      |      | 1.00 | 0.85 |
| Fl <sub>t</sub> Protected         |      |      |      |      | 1.00 |      |      | 1.00 |      |      | 0.99 | 1.00 |
| Satd. Flow (prot)                 |      |      |      |      | 1643 |      |      | 1594 |      |      | 1851 | 1425 |
| Fl <sub>t</sub> Permitted         |      |      |      |      | 1.00 |      |      | 0.91 |      |      | 0.85 | 1.00 |
| Satd. Flow (perm)                 |      |      |      |      | 1643 |      |      | 1461 |      |      | 1592 | 1425 |
| Volume (vph)                      | 0    | 0    | 0    | 12   | 108  | 16   | 69   | 423  | 244  | 71   | 488  | 338  |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0    | 12   | 108  | 16   | 69   | 423  | 244  | 71   | 488  | 338  |
| RTOR Reduction (vph)              | 0    | 0    | 0    | 0    | 6    | 0    | 0    | 22   | 0    | 0    | 0    | 101  |
| Lane Group Flow (vph)             | 0    | 0    | 0    | 0    | 130  | 0    | 0    | 714  | 0    | 0    | 559  | 237  |
| Parking (#/hr)                    |      |      |      | 0    | 0    | 0    | 0    | 0    | 0    |      |      | 0    |
| Turn Type                         |      |      |      | Perm |      | Perm |      | Perm |      | Perm |      | Perm |
| Protected Phases                  |      |      |      |      | 8    |      |      | 2    |      |      | 6    |      |
| Permitted Phases                  |      |      |      | 8    |      | 2    |      |      | 6    |      |      | 6    |
| Actuated Green, G (s)             |      |      |      |      | 17.0 |      |      | 57.0 |      |      | 57.0 | 57.0 |
| Effective Green, g (s)            |      |      |      |      | 16.0 |      |      | 56.0 |      |      | 56.0 | 56.0 |
| Actuated g/C Ratio                |      |      |      |      | 0.20 |      |      | 0.70 |      |      | 0.70 | 0.70 |
| Clearance Time (s)                |      |      |      |      | 3.0  |      |      | 3.0  |      |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)                |      |      |      |      | 329  |      |      | 1023 |      |      | 1114 | 998  |
| v/s Ratio Prot                    |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm                    |      |      |      |      | 0.08 |      |      | 0.49 |      |      | 0.35 | 0.17 |
| v/c Ratio                         |      |      |      |      | 0.39 |      |      | 0.70 |      |      | 0.50 | 0.24 |
| Uniform Delay, d <sub>1</sub>     |      |      |      |      | 27.8 |      |      | 7.0  |      |      | 5.5  | 4.3  |
| Progression Factor                |      |      |      |      | 1.00 |      |      | 0.37 |      |      | 1.11 | 2.64 |
| Incremental Delay, d <sub>2</sub> |      |      |      |      | 3.5  |      |      | 1.9  |      |      | 1.5  | 0.5  |
| Delay (s)                         |      |      |      |      | 31.3 |      |      | 4.5  |      |      | 7.6  | 11.9 |
| Level of Service                  |      |      |      |      | C    |      |      | A    |      |      | A    | B    |
| Approach Delay (s)                |      | 0.0  |      |      | 31.3 |      |      | 4.5  |      |      | 9.2  |      |
| Approach LOS                      |      | A    |      |      | C    |      |      | A    |      |      | A    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 8.9   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.63  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 87.9% | ICU Level of Service | E   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3426: L Street & 19th Street

4/4/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↔    |      |      | ↕     |      |      |      |      |      | ↕↔   |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      |      | 4.0   |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00 |      |      | 1.00  |      |      |      |      |      | 0.95 |      |
| Frt                    |      | 0.97 |      |      | 1.00  |      |      |      |      |      | 0.99 |      |
| Flt Protected          |      | 1.00 |      |      | 1.00  |      |      |      |      |      | 0.97 |      |
| Satd. Flow (prot)      |      | 1624 |      |      | 1671  |      |      |      |      |      | 3244 |      |
| Flt Permitted          |      | 1.00 |      |      | 0.98  |      |      |      |      |      | 0.97 |      |
| Satd. Flow (perm)      |      | 1624 |      |      | 1647  |      |      |      |      |      | 3244 |      |
| Volume (vph)           | 0    | 79   | 24   | 29   | 426   | 0    | 0    | 0    | 0    | 310  | 234  | 37   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 79   | 24   | 29   | 426   | 0    | 0    | 0    | 0    | 310  | 234  | 37   |
| RTOR Reduction (vph)   | 0    | 11   | 0    | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 8    | 0    |
| Lane Group Flow (vph)  | 0    | 92   | 0    | 0    | 455   | 0    | 0    | 0    | 0    | 0    | 573  | 0    |
| Parking (#/hr)         |      | 0    | 0    | 0    | 0     |      |      |      |      | 0    | 0    | 0    |
| Turn Type              |      |      |      |      | Perm  |      |      |      |      |      | Perm |      |
| Protected Phases       |      | 2    |      |      | 6     |      |      |      |      |      | 4    |      |
| Permitted Phases       |      |      |      | 6    |       | 6    |      |      |      | 4    |      | 4    |
| Actuated Green, G (s)  |      | 33.0 |      |      | 33.0  |      |      |      |      |      | 21.0 |      |
| Effective Green, g (s) |      | 32.0 |      |      | 32.0  |      |      |      |      |      | 20.0 |      |
| Actuated g/C Ratio     |      | 0.53 |      |      | 0.53  |      |      |      |      |      | 0.33 |      |
| Clearance Time (s)     |      | 3.0  |      |      | 3.0   |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 866  |      |      | 878   |      |      |      |      |      | 1081 |      |
| v/s Ratio Prot         |      | 0.06 |      |      |       |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      |      |      | c0.28 |      |      |      |      |      | 0.18 |      |
| v/c Ratio              |      | 0.11 |      |      | 0.52  |      |      |      |      |      | 0.53 |      |
| Uniform Delay, d1      |      | 6.9  |      |      | 9.0   |      |      |      |      |      | 16.2 |      |
| Progression Factor     |      | 1.00 |      |      | 0.45  |      |      |      |      |      | 0.80 |      |
| Incremental Delay, d2  |      | 0.2  |      |      | 1.5   |      |      |      |      |      | 1.7  |      |
| Delay (s)              |      | 7.2  |      |      | 5.6   |      |      |      |      |      | 14.6 |      |
| Level of Service       |      | A    |      |      | A     |      |      |      |      |      | B    |      |
| Approach Delay (s)     |      | 7.2  |      |      | 5.6   |      |      | 0.0  |      |      | 14.6 |      |
| Approach LOS           |      | A    |      |      | A     |      |      | A    |      |      | B    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.3  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.52  |                      |     |
| Actuated Cycle Length (s)         | 60.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 54.5% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3427: L Street & 26th Street

4/4/2005



| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|---------------------------|------|------|------|------|-------|------|------|-------|------|------|------|------|
| Lane Configurations       |      | ↕    |      |      | ↕     |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |      | 4.0  |      |      | 4.0   |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor         |      | 1.00 |      |      | 1.00  |      |      | 1.00  |      |      | 1.00 |      |
| Fr <sub>t</sub>           |      | 1.00 |      |      | 0.99  |      |      | 1.00  |      |      | 0.95 |      |
| Fl <sub>t</sub> Protected |      | 1.00 |      |      | 1.00  |      |      | 0.98  |      |      | 1.00 |      |
| Satd. Flow (prot)         |      | 1676 |      |      | 1654  |      |      | 1648  |      |      | 1586 |      |
| Fl <sub>t</sub> Permitted |      | 1.00 |      |      | 0.99  |      |      | 0.93  |      |      | 0.99 |      |
| Satd. Flow (perm)         |      | 1675 |      |      | 1635  |      |      | 1558  |      |      | 1580 |      |
| Volume (vph)              | 1    | 378  | 1    | 14   | 363   | 35   | 19   | 36    | 0    | 3    | 37   | 25   |
| Peak-hour factor, PHF     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 1    | 378  | 1    | 14   | 363   | 35   | 19   | 36    | 0    | 3    | 37   | 25   |
| RTOR Reduction (vph)      | 0    | 0    | 0    | 0    | 6     | 0    | 0    | 0     | 0    | 0    | 16   | 0    |
| Lane Group Flow (vph)     | 0    | 380  | 0    | 0    | 406   | 0    | 0    | 55    | 0    | 0    | 49   | 0    |
| Parking (#/hr)            | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type                 | Perm |      | Perm |      | Perm  |      | Perm |       | Perm |      | Perm |      |
| Protected Phases          |      | 4    |      |      | 8     |      |      | 2     |      |      | 6    |      |
| Permitted Phases          | 4    |      | 8    |      | 2     |      | 6    |       | 6    |      | 6    |      |
| Actuated Green, G (s)     |      | 32.0 |      |      | 32.0  |      |      | 22.0  |      |      | 22.0 |      |
| Effective Green, g (s)    |      | 31.0 |      |      | 31.0  |      |      | 21.0  |      |      | 21.0 |      |
| Actuated g/C Ratio        |      | 0.52 |      |      | 0.52  |      |      | 0.35  |      |      | 0.35 |      |
| Clearance Time (s)        |      | 3.0  |      |      | 3.0   |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)        |      | 865  |      |      | 845   |      |      | 545   |      |      | 553  |      |
| v/s Ratio Prot            |      |      |      |      |       |      |      |       |      |      |      |      |
| v/s Ratio Perm            |      | 0.23 |      |      | c0.25 |      |      | c0.04 |      |      | 0.03 |      |
| v/c Ratio                 |      | 0.44 |      |      | 0.48  |      |      | 0.10  |      |      | 0.09 |      |
| Uniform Delay, d1         |      | 9.1  |      |      | 9.3   |      |      | 13.1  |      |      | 13.1 |      |
| Progression Factor        |      | 0.68 |      |      | 1.00  |      |      | 0.75  |      |      | 1.00 |      |
| Incremental Delay, d2     |      | 1.2  |      |      | 2.0   |      |      | 0.4   |      |      | 0.3  |      |
| Delay (s)                 |      | 7.4  |      |      | 11.3  |      |      | 10.2  |      |      | 13.4 |      |
| Level of Service          |      | A    |      |      | B     |      |      | B     |      |      | B    |      |
| Approach Delay (s)        |      | 7.4  |      |      | 11.3  |      |      | 10.2  |      |      | 13.4 |      |
| Approach LOS              |      | A    |      |      | B     |      |      | B     |      |      | B    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 9.7   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.33  |                      |     |
| Actuated Cycle Length (s)         | 60.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 48.2% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3428: J Street & 29th St off ramp

4/4/2005



| Movement               | EBT   | EBR  | WBL   | WBT   | SBL   | SBT   | SWL2  | SWL   |
|------------------------|-------|------|-------|-------|-------|-------|-------|-------|
| Lane Configurations    | ↑↑    | ↑    |       | ↔     |       | ↑↑↑   |       | ↔     |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  |
| Total Lost time (s)    | 4.0   | 4.0  |       | 4.0   |       | 4.0   |       | 4.0   |
| Lane Util. Factor      | 0.95  | 1.00 |       | 1.00  |       | 0.91  |       | 0.97  |
| Frt                    | 1.00  | 0.85 |       | 1.00  |       | 1.00  |       | 1.00  |
| Flt Protected          | 1.00  | 1.00 |       | 0.95  |       | 0.99  |       | 0.95  |
| Satd. Flow (prot)      | 3539  | 1425 |       | 1770  |       | 4888  |       | 3433  |
| Flt Permitted          | 1.00  | 1.00 |       | 0.95  |       | 0.99  |       | 0.95  |
| Satd. Flow (perm)      | 3539  | 1425 |       | 1770  |       | 4888  |       | 3433  |
| Volume (vph)           | 864   | 330  | 129   | 0     | 34    | 264   | 423   | 575   |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)        | 864   | 330  | 129   | 0     | 34    | 264   | 423   | 575   |
| RTOR Reduction (vph)   | 0     | 86   | 0     | 0     | 0     | 0     | 0     | 0     |
| Lane Group Flow (vph)  | 864   | 244  | 0     | 129   | 0     | 298   | 0     | 998   |
| Parking (#/hr)         |       | 0    |       |       |       | 0     |       |       |
| Turn Type              |       | Perm | Split |       | Split |       | Split |       |
| Protected Phases       | 4     |      | 8     | 8     | 6     | 6     | 2     | 2     |
| Permitted Phases       |       | 4    |       |       |       |       |       |       |
| Actuated Green, G (s)  | 23.0  | 23.0 |       | 8.0   |       | 7.0   |       | 30.0  |
| Effective Green, g (s) | 22.0  | 22.0 |       | 7.0   |       | 6.0   |       | 29.0  |
| Actuated g/C Ratio     | 0.28  | 0.28 |       | 0.09  |       | 0.08  |       | 0.36  |
| Clearance Time (s)     | 3.0   | 3.0  |       | 3.0   |       | 3.0   |       | 3.0   |
| Lane Grp Cap (vph)     | 973   | 392  |       | 155   |       | 367   |       | 1244  |
| v/s Ratio Prot         | c0.24 |      |       | c0.07 |       | c0.06 |       | c0.29 |
| v/s Ratio Perm         |       | 0.17 |       |       |       |       |       |       |
| v/c Ratio              | 0.89  | 0.62 |       | 0.83  |       | 0.81  |       | 0.80  |
| Uniform Delay, d1      | 27.8  | 25.4 |       | 35.9  |       | 36.4  |       | 22.9  |
| Progression Factor     | 0.63  | 0.32 |       | 0.45  |       | 1.00  |       | 1.00  |
| Incremental Delay, d2  | 11.0  | 6.5  |       | 34.4  |       | 17.5  |       | 5.5   |
| Delay (s)              | 28.4  | 14.8 |       | 50.4  |       | 54.0  |       | 28.4  |
| Level of Service       | C     | B    |       | D     |       | D     |       | C     |
| Approach Delay (s)     | 24.6  |      |       | 50.4  |       | 54.0  |       | 28.4  |
| Approach LOS           | C     |      |       | D     |       | D     |       | C     |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 30.7  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.84  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 16.0 |
| Intersection Capacity Utilization | 78.6% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

# HCM Signalized Intersection Capacity Analysis

3429: J Street & Alhambra

4/4/2005



| Movement                  | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR   |
|---------------------------|-------|-------|------|-------|-------|------|------|------|------|------|------|-------|
| Lane Configurations       |       | ↔     |      | ↖     | ↖     | ↗    |      | ↕    |      |      | ↕    |       |
| Ideal Flow (vphpl)        | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  |
| Total Lost time (s)       |       | 4.0   |      | 4.0   | 4.0   | 4.0  |      | 4.0  |      |      | 4.0  |       |
| Lane Util. Factor         |       | 0.95  |      | 0.95  | 0.95  | 1.00 |      | 0.95 |      |      | 0.95 |       |
| Fr <sub>t</sub>           |       | 0.98  |      | 1.00  | 1.00  | 0.85 |      | 0.97 |      |      | 1.00 |       |
| Fl <sub>t</sub> Protected |       | 0.99  |      | 0.95  | 0.98  | 1.00 |      | 1.00 |      |      | 1.00 |       |
| Satd. Flow (prot)         |       | 3266  |      | 1681  | 1737  | 1425 |      | 3262 |      |      | 3359 |       |
| Fl <sub>t</sub> Permitted |       | 0.99  |      | 0.95  | 0.98  | 1.00 |      | 1.00 |      |      | 0.95 |       |
| Satd. Flow (perm)         |       | 3266  |      | 1681  | 1737  | 1425 |      | 3262 |      |      | 3186 |       |
| Volume (vph)              | 152   | 1077  | 228  | 473   | 222   | 97   | 0    | 253  | 63   | 7    | 318  | 0     |
| Peak-hour factor, PHF     | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  |
| Adj. Flow (vph)           | 152   | 1077  | 228  | 473   | 222   | 97   | 0    | 253  | 63   | 7    | 318  | 0     |
| RTOR Reduction (vph)      | 0     | 19    | 0    | 0     | 0     | 78   | 0    | 28   | 0    | 0    | 0    | 0     |
| Lane Group Flow (vph)     | 0     | 1438  | 0    | 338   | 357   | 19   | 0    | 288  | 0    | 0    | 325  | 0     |
| Parking (#/hr)            |       | 0     | 0    |       |       | 0    |      | 0    | 0    |      | 0    |       |
| Turn Type                 | Split |       |      | Split |       | Perm | Perm |      |      | Perm |      |       |
| Protected Phases          | 4     | 4     |      | 8     | 8     |      |      | 2    |      |      |      | 6     |
| Permitted Phases          |       |       |      |       |       | 8    | 2    |      |      | 6    |      |       |
| Actuated Green, G (s)     |       | 36.0  |      | 17.0  | 17.0  | 17.0 |      | 18.0 |      |      |      | 18.0  |
| Effective Green, g (s)    |       | 35.0  |      | 16.0  | 16.0  | 16.0 |      | 17.0 |      |      |      | 17.0  |
| Actuated g/C Ratio        |       | 0.44  |      | 0.20  | 0.20  | 0.20 |      | 0.21 |      |      |      | 0.21  |
| Clearance Time (s)        |       | 3.0   |      | 3.0   | 3.0   | 3.0  |      | 3.0  |      |      |      | 3.0   |
| Lane Grp Cap (vph)        |       | 1429  |      | 336   | 347   | 285  |      | 693  |      |      |      | 677   |
| v/s Ratio Prot            |       | c0.44 |      | 0.20  | c0.21 |      |      | 0.09 |      |      |      |       |
| v/s Ratio Perm            |       |       |      |       |       | 0.01 |      |      |      |      |      | c0.10 |
| v/c Ratio                 |       | 1.01  |      | 1.01  | 1.03  | 0.07 |      | 0.42 |      |      |      | 0.48  |
| Uniform Delay, d1         |       | 22.5  |      | 32.0  | 32.0  | 26.0 |      | 27.2 |      |      |      | 27.6  |
| Progression Factor        |       | 0.39  |      | 1.00  | 1.00  | 1.00 |      | 0.55 |      |      |      | 1.00  |
| Incremental Delay, d2     |       | 23.3  |      | 50.6  | 55.9  | 0.5  |      | 1.7  |      |      |      | 2.4   |
| Delay (s)                 |       | 32.1  |      | 82.6  | 87.9  | 26.4 |      | 16.8 |      |      |      | 30.1  |
| Level of Service          |       | C     |      | F     | F     | C    |      | B    |      |      |      | C     |
| Approach Delay (s)        |       | 32.1  |      |       | 78.1  |      |      | 16.8 |      |      |      | 30.1  |
| Approach LOS              |       | C     |      |       | E     |      |      | B    |      |      |      | C     |

## Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 42.8  | HCM Level of Service | D    |
| HCM Volume to Capacity ratio      | 0.88  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 84.2% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3435: N Street & 29th Street

4/4/2005



| Movement               | EBT   | EBR  | EBR2 | WBL2  | WBL   | WBT   | SBL2 | SBL   | SBT  | SBR  |
|------------------------|-------|------|------|-------|-------|-------|------|-------|------|------|
| Lane Configurations    | ↔     | ↔    |      |       | ↔     | ↔     |      | ↔     | ↔    |      |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900  | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    | 4.0   | 4.0  |      |       | 4.0   | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor      | 0.95  | 0.95 |      |       | 0.95  | 0.95  |      | 0.97  | 0.95 |      |
| Flt                    | 0.94  | 0.85 |      |       | 1.00  | 1.00  |      | 1.00  | 1.00 |      |
| Flt Protected          | 1.00  | 1.00 |      |       | 0.95  | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)      | 1490  | 1354 |      |       | 1681  | 1770  |      | 3433  | 3350 |      |
| Flt Permitted          | 1.00  | 1.00 |      |       | 0.95  | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)      | 1490  | 1354 |      |       | 1681  | 1770  |      | 3433  | 3350 |      |
| Volume (vph)           | 54    | 92   | 40   | 145   | 111   | 663   | 84   | 927   | 366  | 9    |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 54    | 92   | 40   | 145   | 111   | 663   | 84   | 927   | 366  | 9    |
| RTOR Reduction (vph)   | 0     | 32   | 0    | 0     | 0     | 0     | 0    | 0     | 2    | 0    |
| Lane Group Flow (vph)  | 95    | 59   | 0    | 0     | 256   | 663   | 0    | 1011  | 373  | 0    |
| Parking (#/hr)         | 0     | 0    | 0    |       |       |       |      |       | 0    |      |
| Turn Type              |       | Prot |      | Split | Split |       | Perm | Perm  |      |      |
| Protected Phases       | 4     | 4    |      | 8     | 8     | 8     |      |       | 6    |      |
| Permitted Phases       |       |      |      |       |       |       | 6    | 6     |      |      |
| Actuated Green, G (s)  | 17.0  | 17.0 |      |       | 30.0  | 30.0  |      | 24.0  | 24.0 |      |
| Effective Green, g (s) | 16.0  | 16.0 |      |       | 29.0  | 29.0  |      | 23.0  | 23.0 |      |
| Actuated g/C Ratio     | 0.20  | 0.20 |      |       | 0.36  | 0.36  |      | 0.29  | 0.29 |      |
| Clearance Time (s)     | 3.0   | 3.0  |      |       | 3.0   | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     | 298   | 271  |      |       | 609   | 642   |      | 987   | 963  |      |
| v/s Ratio Prot         | c0.06 | 0.04 |      |       | 0.15  | c0.37 |      |       | 0.11 |      |
| v/s Ratio Perm         |       |      |      |       |       |       |      | c0.29 |      |      |
| v/c Ratio              | 0.32  | 0.22 |      |       | 0.42  | 1.03  |      | 1.02  | 0.39 |      |
| Uniform Delay, d1      | 27.3  | 26.8 |      |       | 19.2  | 25.5  |      | 28.5  | 22.8 |      |
| Progression Factor     | 0.93  | 0.94 |      |       | 0.83  | 0.85  |      | 0.79  | 0.74 |      |
| Incremental Delay, d2  | 2.7   | 1.8  |      |       | 1.1   | 34.4  |      | 32.7  | 1.0  |      |
| Delay (s)              | 28.1  | 27.0 |      |       | 16.9  | 56.0  |      | 55.2  | 17.8 |      |
| Level of Service       | C     | C    |      |       | B     | E     |      | E     | B    |      |
| Approach Delay (s)     | 27.6  |      |      |       |       | 45.1  |      |       | 45.1 |      |
| Approach LOS           | C     |      |      |       |       | D     |      |       | D    |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 43.8  | HCM Level of Service | D    |
| HCM Volume to Capacity ratio      | 0.86  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 75.5% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
3436: Capitol & Alhambra

4/4/2005



| Movement                  | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|---------------------------|-------|-------|------|-------|-------|------|------|-------|------|------|------|------|
| Lane Configurations       |       | ↔     |      |       | ↔     |      | ↖    | ↗     | ↖    | ↗    | ↖    | ↗    |
| Ideal Flow (vphpl)        | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |       | 4.0   |      |       | 4.0   |      | 4.0  | 4.0   | 4.0  | 4.0  | 4.0  | 4.0  |
| Lane Util. Factor         |       | 0.95  |      |       | 0.95  |      | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Fr <sub>t</sub>           |       | 0.98  |      |       | 0.98  |      | 1.00 | 1.00  | 0.85 | 1.00 | 1.00 | 0.85 |
| Fl <sub>t</sub> Protected |       | 0.99  |      |       | 1.00  |      | 0.95 | 1.00  | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot)         |       | 3273  |      |       | 3294  |      | 1770 | 1676  | 1425 | 1770 | 1676 | 1425 |
| Fl <sub>t</sub> Permitted |       | 0.99  |      |       | 1.00  |      | 0.38 | 1.00  | 1.00 | 0.19 | 1.00 | 1.00 |
| Satd. Flow (perm)         |       | 3273  |      |       | 3294  |      | 703  | 1676  | 1425 | 346  | 1676 | 1425 |
| Volume (vph)              | 87    | 303   | 50   | 29    | 751   | 112  | 51   | 578   | 101  | 94   | 390  | 50   |
| Peak-hour factor, PHF     | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 87    | 303   | 50   | 29    | 751   | 112  | 51   | 578   | 101  | 94   | 390  | 50   |
| RTOR Reduction (vph)      | 0     | 13    | 0    | 0     | 14    | 0    | 0    | 0     | 40   | 0    | 0    | 29   |
| Lane Group Flow (vph)     | 0     | 427   | 0    | 0     | 878   | 0    | 51   | 578   | 61   | 94   | 390  | 21   |
| Parking (#/hr)            |       | 0     | 0    |       | 0     | 0    |      | 0     | 0    |      | 0    | 0    |
| Turn Type                 | Split |       |      | Split |       |      | Perm |       | Perm | Perm |      | Perm |
| Protected Phases          | 4     | 4     |      | 8     | 8     |      |      | 2     |      | 6    |      | 6    |
| Permitted Phases          |       |       |      |       |       |      | 2    |       | 2    | 6    |      | 6    |
| Actuated Green, G (s)     |       | 13.0  |      |       | 25.0  |      | 33.0 | 33.0  | 33.0 | 33.0 | 33.0 | 33.0 |
| Effective Green, g (s)    |       | 12.0  |      |       | 24.0  |      | 32.0 | 32.0  | 32.0 | 32.0 | 32.0 | 32.0 |
| Actuated g/C Ratio        |       | 0.15  |      |       | 0.30  |      | 0.40 | 0.40  | 0.40 | 0.40 | 0.40 | 0.40 |
| Clearance Time (s)        |       | 3.0   |      |       | 3.0   |      | 3.0  | 3.0   | 3.0  | 3.0  | 3.0  | 3.0  |
| Lane Grp Cap (vph)        |       | 491   |      |       | 988   |      | 281  | 670   | 570  | 138  | 670  | 570  |
| v/s Ratio Prot            |       | c0.13 |      |       | c0.27 |      |      | c0.34 |      |      | 0.23 |      |
| v/s Ratio Perm            |       |       |      |       |       |      | 0.07 |       | 0.04 | 0.27 |      | 0.01 |
| v/c Ratio                 |       | 0.87  |      |       | 0.89  |      | 0.18 | 0.86  | 0.11 | 0.68 | 0.58 | 0.04 |
| Uniform Delay, d1         |       | 33.2  |      |       | 26.7  |      | 15.5 | 22.0  | 15.0 | 19.8 | 18.8 | 14.6 |
| Progression Factor        |       | 1.03  |      |       | 1.00  |      | 0.79 | 0.69  | 0.71 | 0.91 | 0.92 | 1.26 |
| Incremental Delay, d2     |       | 18.1  |      |       | 11.8  |      | 0.7  | 7.6   | 0.2  | 21.8 | 3.3  | 0.1  |
| Delay (s)                 |       | 52.2  |      |       | 38.5  |      | 13.0 | 22.6  | 10.9 | 39.8 | 20.5 | 18.6 |
| Level of Service          |       | D     |      |       | D     |      | B    | C     | B    | D    | C    | B    |
| Approach Delay (s)        |       | 52.2  |      |       | 38.5  |      |      | 20.3  |      |      | 23.7 |      |
| Approach LOS              |       | D     |      |       | D     |      |      | C     |      |      | C    |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 32.7  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.87  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 86.6% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3437: P Street & P St off ramp

4/4/2005



| Movement                          | EBT  | EBR  | WBL   | WBT  | SBL   | SBT   | SBR  | SWL2  | SWL  | SWR  |
|-----------------------------------|------|------|-------|------|-------|-------|------|-------|------|------|
| Lane Configurations               | ↑    | ↗    | ↖     | ↑    |       | ↑↑↑   |      | ↖     | ↖↗   |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)               | 4.0  | 4.0  | 4.0   | 4.0  |       | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor                 | 1.00 | 1.00 | 1.00  | 1.00 |       | 0.91  |      | 0.91  | 0.91 |      |
| Fr <sub>t</sub>                   | 1.00 | 0.85 | 1.00  | 1.00 |       | 0.98  |      | 1.00  | 0.96 |      |
| Fl <sub>t</sub> Protected         | 1.00 | 1.00 | 0.95  | 1.00 |       | 0.99  |      | 0.95  | 0.96 |      |
| Satd. Flow (prot)                 | 1676 | 1425 | 1593  | 1676 |       | 4769  |      | 1610  | 3140 |      |
| Fl <sub>t</sub> Permitted         | 1.00 | 1.00 | 0.45  | 1.00 |       | 0.99  |      | 0.95  | 0.96 |      |
| Satd. Flow (perm)                 | 1676 | 1425 | 754   | 1676 |       | 4769  |      | 1610  | 3140 |      |
| Volume (vph)                      | 310  | 79   | 191   | 322  | 58    | 339   | 75   | 489   | 291  | 165  |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 310  | 79   | 191   | 322  | 58    | 339   | 75   | 489   | 291  | 165  |
| RTOR Reduction (vph)              | 0    | 49   | 0     | 0    | 0     | 34    | 0    | 0     | 0    | 0    |
| Lane Group Flow (vph)             | 310  | 30   | 191   | 322  | 0     | 438   | 0    | 323   | 622  | 0    |
| Parking (#/hr)                    | 0    | 0    | 0     | 0    | 0     | 0     | 0    | 0     | 0    | 0    |
| Turn Type                         |      | Perm | Perm  |      | Split |       |      | Split |      |      |
| Protected Phases                  | 4    |      |       | 8    | 6     | 6     |      | 2     | 2    |      |
| Permitted Phases                  |      | 4    | 8     |      |       |       |      |       |      |      |
| Actuated Green, G (s)             | 31.0 | 31.0 | 31.0  | 31.0 |       | 17.0  |      | 23.0  | 23.0 |      |
| Effective Green, g (s)            | 30.0 | 30.0 | 30.0  | 30.0 |       | 16.0  |      | 22.0  | 22.0 |      |
| Actuated g/C Ratio                | 0.38 | 0.38 | 0.38  | 0.38 |       | 0.20  |      | 0.28  | 0.28 |      |
| Clearance Time (s)                | 3.0  | 3.0  | 3.0   | 3.0  |       | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)                | 629  | 534  | 283   | 629  |       | 954   |      | 443   | 864  |      |
| v/s Ratio Prot                    | 0.18 |      |       | 0.19 |       | c0.09 |      | c0.20 | 0.20 |      |
| v/s Ratio Perm                    |      | 0.02 | c0.25 |      |       |       |      |       |      |      |
| v/c Ratio                         | 0.49 | 0.06 | 0.67  | 0.51 |       | 0.46  |      | 0.73  | 0.72 |      |
| Uniform Delay, d <sub>1</sub>     | 19.2 | 16.0 | 20.9  | 19.3 |       | 28.2  |      | 26.3  | 26.2 |      |
| Progression Factor                | 1.00 | 1.00 | 0.79  | 0.77 |       | 1.02  |      | 1.00  | 1.00 |      |
| Incremental Delay, d <sub>2</sub> | 2.7  | 0.2  | 10.8  | 2.6  |       | 1.5   |      | 10.1  | 5.1  |      |
| Delay (s)                         | 21.9 | 16.2 | 27.3  | 17.6 |       | 30.2  |      | 36.4  | 31.4 |      |
| Level of Service                  | C    | B    | C     | B    |       | C     |      | D     | C    |      |
| Approach Delay (s)                | 20.7 |      |       | 21.2 |       | 30.2  |      |       | 33.1 |      |
| Approach LOS                      | C    |      |       | C    |       | C     |      |       | C    |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 27.8  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.64  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 67.9% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |



HCM Signalized Intersection Capacity Analysis  
3438: P Street & Alhambra

4/4/2005



| Movement               | EBL  | EBT  | EBR   | WBL  | WBT  | WBR  | NBL   | NBT  | NBR  | SBL   | SBT  | SBR  |
|------------------------|------|------|-------|------|------|------|-------|------|------|-------|------|------|
| Lane Configurations    |      | ↔    |       |      | ↔    | ↗    | ↖     | ↔    |      | ↖     | ↗    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |       |      | 4.0  | 4.0  | 4.0   | 4.0  |      | 4.0   | 4.0  |      |
| Lane Util. Factor      |      | 0.95 |       |      | 0.95 | 1.00 | 1.00  | 1.00 |      | 1.00  | 1.00 |      |
| Frt                    |      | 1.00 |       |      | 1.00 | 0.85 | 1.00  | 1.00 |      | 1.00  | 0.96 |      |
| Flt Protected          |      | 1.00 |       |      | 1.00 | 1.00 | 0.95  | 1.00 |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)      |      | 3539 |       |      | 3525 | 1583 | 1770  | 1857 |      | 1770  | 1796 |      |
| Flt Permitted          |      | 1.00 |       |      | 0.79 | 1.00 | 0.95  | 1.00 |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)      |      | 3539 |       |      | 2804 | 1583 | 1770  | 1857 |      | 1770  | 1796 |      |
| Volume (vph)           | 0    | 768  | 0     | 74   | 832  | 244  | 66    | 360  | 8    | 95    | 254  | 79   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 768  | 0     | 74   | 832  | 244  | 66    | 360  | 8    | 95    | 254  | 79   |
| RTOR Reduction (vph)   | 0    | 0    | 0     | 0    | 0    | 137  | 0     | 1    | 0    | 0     | 14   | 0    |
| Lane Group Flow (vph)  | 0    | 768  | 0     | 0    | 906  | 107  | 66    | 367  | 0    | 95    | 319  | 0    |
| Turn Type              | Perm |      | Perm  |      | Perm | Prot | Prot  |      |      |       |      |      |
| Protected Phases       | 4    |      | 8     |      | 8    | 5    | 2     | 1    |      | 6     |      |      |
| Permitted Phases       | 4    |      | 8     |      | 8    |      |       |      |      |       |      |      |
| Actuated Green, G (s)  | 36.0 |      | 36.0  |      | 36.0 | 8.0  | 26.0  | 9.0  |      | 27.0  |      |      |
| Effective Green, g (s) | 35.0 |      | 35.0  |      | 35.0 | 7.0  | 25.0  | 8.0  |      | 26.0  |      |      |
| Actuated g/C Ratio     | 0.44 |      | 0.44  |      | 0.44 | 0.09 | 0.31  | 0.10 |      | 0.32  |      |      |
| Clearance Time (s)     | 3.0  |      | 3.0   |      | 3.0  | 3.0  | 3.0   | 3.0  |      | 3.0   |      |      |
| Lane Grp Cap (vph)     | 1548 |      | 1227  |      | 693  | 155  | 580   | 177  |      | 584   |      |      |
| v/s Ratio Prot         | 0.22 |      |       |      |      | 0.04 | c0.20 | 0.05 |      | c0.18 |      |      |
| v/s Ratio Perm         |      |      | c0.32 |      | 0.07 |      |       |      |      |       |      |      |
| v/c Ratio              | 0.50 |      | 0.74  |      | 0.15 | 0.43 | 0.63  | 0.54 |      | 0.55  |      |      |
| Uniform Delay, d1      | 16.2 |      | 18.7  |      | 13.6 | 34.6 | 23.6  | 34.2 |      | 22.2  |      |      |
| Progression Factor     | 0.34 |      | 1.00  |      | 1.00 | 1.00 | 1.00  | 0.69 |      | 0.79  |      |      |
| Incremental Delay, d2  | 0.8  |      | 4.0   |      | 0.5  | 8.3  | 5.2   | 8.4  |      | 2.7   |      |      |
| Delay (s)              | 6.2  |      | 22.7  |      | 14.0 | 42.9 | 28.8  | 32.1 |      | 20.3  |      |      |
| Level of Service       | A    |      | C     |      | B    | D    | C     | C    |      | C     |      |      |
| Approach Delay (s)     | 6.2  |      | 20.9  |      | 30.9 |      | 22.9  |      |      |       |      |      |
| Approach LOS           | A    |      | C     |      | C    |      | C     |      |      |       |      |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 18.7  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.69  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 84.4% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

3444: Q Street & 29th Street

4/4/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|-------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↕     |      | ↙    | ↘    |      |      |      |      |      | ↕↕↕  |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      |      |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00  |      |      |      |      |      |      |      |      | 0.91 |      |
| Frt                    |      | 0.98  |      |      |      |      |      |      |      |      | 0.96 |      |
| Flt Protected          |      | 1.00  |      |      |      |      |      |      |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 1826  |      |      |      |      |      |      |      |      | 4852 |      |
| Flt Permitted          |      | 1.00  |      |      |      |      |      |      |      |      | 1.00 |      |
| Satd. Flow (perm)      |      | 1826  |      |      |      |      |      |      |      |      | 4852 |      |
| Volume (vph)           | 0    | 226   | 39   | 0    | 0    | 0    | 0    | 0    | 0    | 31   | 779  | 342  |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 226   | 39   | 0    | 0    | 0    | 0    | 0    | 0    | 31   | 779  | 342  |
| RTOR Reduction (vph)   | 0    | 8     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 95   | 0    |
| Lane Group Flow (vph)  | 0    | 257   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1057 | 0    |
| Turn Type              |      |       |      | Perm |      |      |      |      |      |      | Perm |      |
| Protected Phases       |      | 4     |      |      | 8    |      |      |      |      |      |      | 6    |
| Permitted Phases       |      |       |      | 8    |      |      |      |      |      | 6    |      |      |
| Actuated Green, G (s)  |      | 35.0  |      |      |      |      |      |      |      |      |      | 39.0 |
| Effective Green, g (s) |      | 34.0  |      |      |      |      |      |      |      |      |      | 38.0 |
| Actuated g/C Ratio     |      | 0.42  |      |      |      |      |      |      |      |      |      | 0.48 |
| Clearance Time (s)     |      | 3.0   |      |      |      |      |      |      |      |      |      | 3.0  |
| Lane Grp Cap (vph)     |      | 776   |      |      |      |      |      |      |      |      |      | 2305 |
| v/s Ratio Prot         |      | c0.14 |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |       |      |      |      |      |      |      |      |      |      | 0.22 |
| v/c Ratio              |      | 0.33  |      |      |      |      |      |      |      |      |      | 0.46 |
| Uniform Delay, d1      |      | 15.4  |      |      |      |      |      |      |      |      |      | 14.1 |
| Progression Factor     |      | 1.00  |      |      |      |      |      |      |      |      |      | 0.56 |
| Incremental Delay, d2  |      | 1.1   |      |      |      |      |      |      |      |      |      | 0.6  |
| Delay (s)              |      | 16.5  |      |      |      |      |      |      |      |      |      | 8.5  |
| Level of Service       |      | B     |      |      |      |      |      |      |      |      |      | A    |
| Approach Delay (s)     |      | 16.5  |      |      | 0.0  |      |      | 0.0  |      |      |      | 8.5  |
| Approach LOS           |      | B     |      |      | A    |      |      | A    |      |      |      | A    |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.0  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.40  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 44.3% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 3467: N Street & Alhambra

4/4/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|-------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations    |      | ↕     |      |      | ↕    |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      | 4.0  |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00  |      |      | 1.00 |      |      | 1.00  |      |      | 1.00 |      |
| Frt                    |      | 0.98  |      |      | 0.99 |      |      | 0.99  |      |      | 0.99 |      |
| Flt Protected          |      | 0.97  |      |      | 0.99 |      |      | 1.00  |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 1597  |      |      | 1640 |      |      | 1649  |      |      | 1662 |      |
| Flt Permitted          |      | 0.66  |      |      | 0.87 |      |      | 0.97  |      |      | 0.98 |      |
| Satd. Flow (perm)      |      | 1075  |      |      | 1444 |      |      | 1609  |      |      | 1638 |      |
| Volume (vph)           | 235  | 144   | 78   | 55   | 223  | 30   | 25   | 503   | 62   | 12   | 417  | 24   |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 235  | 144   | 78   | 55   | 223  | 30   | 25   | 503   | 62   | 12   | 417  | 24   |
| RTOR Reduction (vph)   | 0    | 9     | 0    | 0    | 5    | 0    | 0    | 5     | 0    | 0    | 2    | 0    |
| Lane Group Flow (vph)  | 0    | 448   |      | 0    | 0    | 303  | 0    | 0     | 585  | 0    | 0    | 451  |
| Parking (#/hr)         | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |       | Perm |      | Perm |      | Perm |       | Perm |      | Perm |      |
| Protected Phases       |      | 4     |      |      | 8    |      |      | 2     |      |      | 6    |      |
| Permitted Phases       | 4    |       | 8    |      | 2    |      | 6    |       | 6    |      | 6    |      |
| Actuated Green, G (s)  |      | 39.0  |      |      | 39.0 |      |      | 35.0  |      |      | 35.0 |      |
| Effective Green, g (s) |      | 38.0  |      |      | 38.0 |      |      | 34.0  |      |      | 34.0 |      |
| Actuated g/C Ratio     |      | 0.48  |      |      | 0.48 |      |      | 0.42  |      |      | 0.42 |      |
| Clearance Time (s)     |      | 3.0   |      |      | 3.0  |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 511   |      |      | 686  |      |      | 684   |      |      | 696  |      |
| v/s Ratio Prot         |      |       |      |      |      |      |      |       |      |      |      |      |
| v/s Ratio Perm         |      | c0.42 |      |      | 0.21 |      |      | c0.36 |      |      | 0.28 |      |
| v/c Ratio              |      | 0.88  |      |      | 0.44 |      |      | 0.86  |      |      | 0.65 |      |
| Uniform Delay, d1      |      | 18.9  |      |      | 14.0 |      |      | 20.8  |      |      | 18.2 |      |
| Progression Factor     |      | 1.10  |      |      | 1.00 |      |      | 0.54  |      |      | 0.48 |      |
| Incremental Delay, d2  |      | 17.6  |      |      | 2.1  |      |      | 11.6  |      |      | 3.6  |      |
| Delay (s)              |      | 38.4  |      |      | 16.0 |      |      | 22.8  |      |      | 12.3 |      |
| Level of Service       |      | D     |      |      | B    |      |      | C     |      |      | B    |      |
| Approach Delay (s)     |      | 38.4  |      |      | 16.0 |      |      | 22.8  |      |      | 12.3 |      |
| Approach LOS           |      | D     |      |      | B    |      |      | C     |      |      | B    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 23.0  | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 0.87  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 93.9% | ICU Level of Service | F   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 5802: K Street & 29th Street

4/4/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑    | ↗    | ↘    | ↑     |      |      |      |      |      | ↑↑   | ↗    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  | 4.0  | 4.0   |      |      |      |      |      | 4.0  | 4.0  |
| Lane Util. Factor      |      | 1.00 | 1.00 | 1.00 | 1.00  |      |      |      |      |      | 0.95 | 1.00 |
| Frt                    |      | 1.00 | 0.85 | 1.00 | 1.00  |      |      |      |      |      | 1.00 | 0.85 |
| Flt Protected          |      | 1.00 | 1.00 | 0.95 | 1.00  |      |      |      |      |      | 0.99 | 1.00 |
| Satd. Flow (prot)      |      | 1863 | 1583 | 1770 | 1863  |      |      |      |      |      | 3519 | 1583 |
| Flt Permitted          |      | 1.00 | 1.00 | 0.72 | 1.00  |      |      |      |      |      | 0.99 | 1.00 |
| Satd. Flow (perm)      |      | 1863 | 1583 | 1337 | 1863  |      |      |      |      |      | 3519 | 1583 |
| Volume (vph)           | 0    | 60   | 236  | 197  | 577   | 0    | 0    | 0    | 0    | 91   | 708  | 413  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 60   | 236  | 197  | 577   | 0    | 0    | 0    | 0    | 91   | 708  | 413  |
| RTOR Reduction (vph)   | 0    | 0    | 42   | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 163  |
| Lane Group Flow (vph)  | 0    | 60   | 194  | 197  | 577   | 0    | 0    | 0    | 0    | 0    | 799  | 250  |
| Turn Type              |      |      | Perm | Perm |       |      |      |      |      | Perm |      | Perm |
| Protected Phases       |      | 4    |      |      | 8     |      |      |      |      |      | 6    |      |
| Permitted Phases       |      |      | 4    | 8    |       |      |      |      |      | 6    |      | 6    |
| Actuated Green, G (s)  |      | 43.0 | 43.0 | 43.0 | 43.0  |      |      |      |      |      | 31.0 | 31.0 |
| Effective Green, g (s) |      | 42.0 | 42.0 | 42.0 | 42.0  |      |      |      |      |      | 30.0 | 30.0 |
| Actuated g/C Ratio     |      | 0.52 | 0.52 | 0.52 | 0.52  |      |      |      |      |      | 0.38 | 0.38 |
| Clearance Time (s)     |      | 3.0  | 3.0  | 3.0  | 3.0   |      |      |      |      |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |      | 978  | 831  | 702  | 978   |      |      |      |      |      | 1320 | 594  |
| v/s Ratio Prot         |      | 0.03 |      |      | c0.31 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      | 0.12 | 0.15 |       |      |      |      |      |      | 0.23 | 0.16 |
| v/c Ratio              |      | 0.06 | 0.23 | 0.28 | 0.59  |      |      |      |      |      | 0.61 | 0.42 |
| Uniform Delay, d1      |      | 9.3  | 10.3 | 10.6 | 13.1  |      |      |      |      |      | 20.2 | 18.6 |
| Progression Factor     |      | 0.90 | 0.87 | 0.59 | 0.57  |      |      |      |      |      | 1.02 | 0.73 |
| Incremental Delay, d2  |      | 0.1  | 0.6  | 0.9  | 2.3   |      |      |      |      |      | 1.3  | 1.2  |
| Delay (s)              |      | 8.5  | 9.6  | 7.1  | 9.8   |      |      |      |      |      | 21.8 | 14.7 |
| Level of Service       |      | A    | A    | A    | A     |      |      |      |      |      | C    | B    |
| Approach Delay (s)     |      | 9.4  |      |      | 9.1   |      |      | 0.0  |      |      | 19.4 |      |
| Approach LOS           |      | A    |      |      | A     |      |      | A    |      |      | B    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 14.6  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.60  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 81.7% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
5848: J Street & 30th Street

4/4/2005



| Movement               | EBL2 | EBL  | EBT   | WBT  | WBR  | NBL2 | NBL  | NBT   | NBR  |
|------------------------|------|------|-------|------|------|------|------|-------|------|
| Lane Configurations    |      |      |       |      |      |      |      |       |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0   | 4.0  |      |      | 4.0  | 4.0   |      |
| Lane Util. Factor      |      | 1.00 | 0.95  | 1.00 |      |      | 0.91 | 0.91  |      |
| Frt                    |      | 1.00 | 1.00  | 0.92 |      |      | 1.00 | 0.90  |      |
| Flt Protected          |      | 0.95 | 1.00  | 1.00 |      |      | 0.95 | 1.00  |      |
| Satd. Flow (prot)      |      | 1770 | 3362  | 1536 |      |      | 1610 | 3048  |      |
| Flt Permitted          |      | 0.95 | 1.00  | 1.00 |      |      | 0.95 | 1.00  |      |
| Satd. Flow (perm)      |      | 1770 | 3362  | 1536 |      |      | 1610 | 3048  |      |
| Volume (vph)           | 119  | 127  | 1045  | 88   | 145  | 41   | 193  | 207   | 426  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 119  | 127  | 1045  | 88   | 145  | 41   | 193  | 207   | 426  |
| RTOR Reduction (vph)   | 0    | 0    | 0     | 0    | 0    | 0    | 0    | 76    | 0    |
| Lane Group Flow (vph)  | 0    | 246  | 1045  | 233  | 0    | 0    | 234  | 557   | 0    |
| Parking (#/hr)         |      |      | 0     | 0    | 0    |      |      |       | 0    |
| Turn Type              | Prot | Prot |       |      |      | Perm | Perm |       |      |
| Protected Phases       | 7    | 7    | 4     | 8    |      |      |      | 2     |      |
| Permitted Phases       |      |      |       |      |      | 2    | 2    |       |      |
| Actuated Green, G (s)  |      | 22.0 | 49.0  | 24.0 |      |      | 25.0 | 25.0  |      |
| Effective Green, g (s) |      | 21.0 | 48.0  | 23.0 |      |      | 24.0 | 24.0  |      |
| Actuated g/C Ratio     |      | 0.26 | 0.60  | 0.29 |      |      | 0.30 | 0.30  |      |
| Clearance Time (s)     |      | 3.0  | 3.0   | 3.0  |      |      | 3.0  | 3.0   |      |
| Lane Grp Cap (vph)     |      | 465  | 2017  | 442  |      |      | 483  | 914   |      |
| v/s Ratio Prot         |      | 0.14 | c0.31 | 0.15 |      |      |      | c0.18 |      |
| v/s Ratio Perm         |      |      |       |      |      |      | 0.15 |       |      |
| v/c Ratio              |      | 0.53 | 0.52  | 0.53 |      |      | 0.48 | 0.61  |      |
| Uniform Delay, d1      |      | 25.3 | 9.3   | 23.9 |      |      | 22.9 | 24.0  |      |
| Progression Factor     |      | 1.00 | 0.74  | 1.22 |      |      | 0.35 | 0.23  |      |
| Incremental Delay, d2  |      | 2.1  | 0.5   | 1.2  |      |      | 3.0  | 2.6   |      |
| Delay (s)              |      | 27.2 | 7.3   | 30.4 |      |      | 11.1 | 8.1   |      |
| Level of Service       |      | C    | A     | C    |      |      | B    | A     |      |
| Approach Delay (s)     |      |      | 11.1  | 30.4 |      |      |      | 8.9   |      |
| Approach LOS           |      |      | B     | C    |      |      |      | A     |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 12.2  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.55  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 54.6% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
5849: L Street & 30th Street

4/4/2005



| Movement              | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations   |      |      |      |      | ↑↑   | ↑    | ↘    | ↙↑↑  |      |      |      |      |
| Ideal Flow (vphpl)    | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)   |      |      |      |      | 4.0  | 4.0  | 4.0  | 4.0  |      |      |      |      |
| Lane Util. Factor     |      |      |      |      | 0.95 | 1.00 | 0.86 | 0.86 |      |      |      |      |
| Frt                   |      |      |      |      | 1.00 | 0.85 | 1.00 | 1.00 |      |      |      |      |
| Flt Protected         |      |      |      |      | 1.00 | 1.00 | 0.95 | 1.00 |      |      |      |      |
| Satd. Flow (prot)     |      |      |      |      | 3539 | 1425 | 1522 | 4646 |      |      |      |      |
| Flt Permitted         |      |      |      |      | 1.00 | 1.00 | 0.95 | 1.00 |      |      |      |      |
| Satd. Flow (perm)     |      |      |      |      | 3539 | 1425 | 1522 | 4646 |      |      |      |      |
| Volume (vph)          | 0    | 0    | 0    | 0    | 439  | 80   | 288  | 1144 | 0    | 0    | 0    | 0    |
| Peak-hour factor, PHF | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)       | 0    | 0    | 0    | 0    | 439  | 80   | 288  | 1144 | 0    | 0    | 0    | 0    |
| RTOR Reduction (vph)  | 0    | 0    | 0    | 0    | 0    | 37   | 113  | 0    | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph) | 0    | 0    | 0    | 0    | 439  | 43   | 175  | 1144 | 0    | 0    | 0    | 0    |
| Parking (#/hr)        |      |      |      |      |      | 0    |      | 0    |      |      |      |      |

| Turn Type              |     | Perm  | Perm  |
|------------------------|-----|-------|-------|
| Protected Phases       |     | 8     | 2     |
| Permitted Phases       |     | 8     | 2     |
| Actuated Green, G (s)  |     | 31.0  | 43.0  |
| Effective Green, g (s) |     | 30.0  | 42.0  |
| Actuated g/C Ratio     |     | 0.38  | 0.52  |
| Clearance Time (s)     |     | 3.0   | 3.0   |
| Lane Grp Cap (vph)     |     | 1327  | 2439  |
| v/s Ratio Prot         |     | c0.12 | c0.25 |
| v/s Ratio Perm         |     | 0.03  | 0.12  |
| v/c Ratio              |     | 0.33  | 0.47  |
| Uniform Delay, d1      |     | 17.8  | 12.0  |
| Progression Factor     |     | 0.63  | 0.42  |
| Incremental Delay, d2  |     | 0.6   | 0.5   |
| Delay (s)              |     | 11.8  | 5.6   |
| Level of Service       |     | B     | A     |
| Approach Delay (s)     | 0.0 | 11.0  | 4.8   |
| Approach LOS           | A   | B     | A     |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 6.4   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.41  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 59.7% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 5880: N Street & 30th Street

4/4/2005

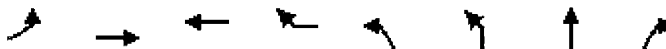


| Movement               | EBL  | EBT  | WBT   | WBR  | NBL  | NBT  | NBR   | NEL2 | NEL   | NER  |
|------------------------|------|------|-------|------|------|------|-------|------|-------|------|
| Lane Configurations    | ↙    | ↑    | ↘     |      |      | ↑↑↑  |       |      | ↘↙    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0  | 4.0  | 4.0   |      |      | 4.0  |       |      | 4.0   |      |
| Lane Util. Factor      | 1.00 | 1.00 | 1.00  |      |      | 0.91 |       |      | 0.97  |      |
| Fr't                   | 1.00 | 1.00 | 0.99  |      |      | 0.99 |       |      | 0.98  |      |
| Flt Protected          | 0.95 | 1.00 | 1.00  |      |      | 0.99 |       |      | 0.96  |      |
| Satd. Flow (prot)      | 1770 | 1863 | 1655  |      |      | 4797 |       |      | 3403  |      |
| Flt Permitted          | 0.35 | 1.00 | 1.00  |      |      | 0.99 |       |      | 0.96  |      |
| Satd. Flow (perm)      | 649  | 1863 | 1655  |      |      | 4797 |       |      | 3403  |      |
| Volume (vph)           | 69   | 59   | 233   | 25   | 185  | 505  | 61    | 603  | 588   | 144  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 69   | 59   | 233   | 25   | 185  | 505  | 61    | 603  | 588   | 144  |
| RTOR Reduction (vph)   | 0    | 0    | 5     | 0    | 0    | 13   | 0     | 0    | 0     | 0    |
| Lane Group Flow (vph)  | 69   | 59   | 253   | 0    | 0    | 738  | 0     | 0    | 1335  | 0    |
| Parking (#/hr)         |      |      | 0     | 0    |      | 0    | 0     |      |       |      |
| Turn Type              | Perm |      |       | Perm |      |      | Split |      |       |      |
| Protected Phases       |      | 4    | 8     |      |      | 2    |       | 6    | 6     |      |
| Permitted Phases       | 4    |      |       |      | 2    |      |       |      |       |      |
| Actuated Green, G (s)  | 17.0 | 17.0 | 17.0  |      |      | 18.0 |       |      | 36.0  |      |
| Effective Green, g (s) | 16.0 | 16.0 | 16.0  |      |      | 17.0 |       |      | 35.0  |      |
| Actuated g/C Ratio     | 0.20 | 0.20 | 0.20  |      |      | 0.21 |       |      | 0.44  |      |
| Clearance Time (s)     | 3.0  | 3.0  | 3.0   |      |      | 3.0  |       |      | 3.0   |      |
| Lane Grp Cap (vph)     | 130  | 373  | 331   |      |      | 1019 |       |      | 1489  |      |
| v/s Ratio Prot         |      | 0.03 | c0.15 |      |      |      |       |      | c0.39 |      |
| v/s Ratio Perm         | 0.11 |      |       |      |      | 0.15 |       |      |       |      |
| v/c Ratio              | 0.53 | 0.16 | 0.76  |      |      | 0.72 |       |      | 0.90  |      |
| Uniform Delay, d1      | 28.6 | 26.4 | 30.2  |      |      | 29.3 |       |      | 20.8  |      |
| Progression Factor     | 1.08 | 1.07 | 0.71  |      |      | 0.74 |       |      | 1.00  |      |
| Incremental Delay, d2  | 9.6  | 0.6  | 13.7  |      |      | 4.4  |       |      | 8.8   |      |
| Delay (s)              | 40.7 | 28.8 | 35.1  |      |      | 26.1 |       |      | 29.6  |      |
| Level of Service       | D    | C    | D     |      |      | C    |       |      | C     |      |
| Approach Delay (s)     |      | 35.2 | 35.1  |      |      | 26.1 |       |      | 29.6  |      |
| Approach LOS           |      | D    | D     |      |      | C    |       |      | C     |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 29.4  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.82  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 84.3% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
5882: P Street & 30th Street

4/4/2005



| Movement                          | EBL  | EBT  | WBT  | WBR  | NBL2 | NBL  | NBT  | NBR  |
|-----------------------------------|------|------|------|------|------|------|------|------|
| Lane Configurations               | ↵    | ↑    | ↕    |      | ↵    | ↵    | ↕    |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               | 4.0  | 4.0  | 4.0  |      | 4.0  | 4.0  | 4.0  |      |
| Lane Util. Factor                 | 1.00 | 1.00 | 0.95 |      | 1.00 | 0.91 | 0.91 |      |
| Fr <sub>t</sub>                   | 1.00 | 1.00 | 0.93 |      | 1.00 | 1.00 | 0.98 |      |
| Fl <sub>t</sub> Protected         | 0.95 | 1.00 | 1.00 |      | 0.95 | 0.95 | 1.00 |      |
| Satd. Flow (prot)                 | 1770 | 1863 | 3308 |      | 1593 | 1449 | 3147 |      |
| Fl <sub>t</sub> Permitted         | 0.28 | 1.00 | 1.00 |      | 0.95 | 0.95 | 1.00 |      |
| Satd. Flow (perm)                 | 517  | 1863 | 3308 |      | 1593 | 1449 | 3147 |      |
| Volume (vph)                      | 109  | 749  | 483  | 374  | 308  | 61   | 322  | 58   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 109  | 749  | 483  | 374  | 308  | 61   | 322  | 58   |
| RTOR Reduction (vph)              | 0    | 0    | 0    | 0    | 0    | 0    | 18   | 0    |
| Lane Group Flow (vph)             | 109  | 749  | 857  | 0    | 308  | 61   | 362  | 0    |
| Parking (#/hr)                    |      |      |      | 0    | 0    | 0    | 0    |      |
| Turn Type                         | Perm |      |      |      | Perm | Perm |      |      |
| Protected Phases                  |      | 4    | 8    |      |      |      | 2    |      |
| Permitted Phases                  | 4    |      |      |      | 2    | 2    |      |      |
| Actuated Green, G (s)             | 47.0 | 47.0 | 47.0 |      | 27.0 | 27.0 | 27.0 |      |
| Effective Green, g (s)            | 46.0 | 46.0 | 46.0 |      | 26.0 | 26.0 | 26.0 |      |
| Actuated g/C Ratio                | 0.57 | 0.57 | 0.57 |      | 0.32 | 0.32 | 0.32 |      |
| Clearance Time (s)                | 3.0  | 3.0  | 3.0  |      | 3.0  | 3.0  | 3.0  |      |
| Lane Grp Cap (vph)                | 297  | 1071 | 1902 |      | 518  | 471  | 1023 |      |
| v/s Ratio Prot                    |      | 0.40 | 0.26 |      |      |      | 0.12 |      |
| v/s Ratio Perm                    | 0.21 |      |      |      | 0.19 | 0.04 |      |      |
| v/c Ratio                         | 0.37 | 0.70 | 0.45 |      | 0.59 | 0.13 | 0.35 |      |
| Uniform Delay, d <sub>1</sub>     | 9.2  | 12.1 | 9.8  |      | 22.6 | 19.0 | 20.6 |      |
| Progression Factor                | 0.56 | 0.58 | 0.42 |      | 1.00 | 1.00 | 1.00 |      |
| Incremental Delay, d <sub>2</sub> | 2.7  | 3.0  | 0.5  |      | 5.0  | 0.6  | 1.0  |      |
| Delay (s)                         | 7.8  | 10.0 | 4.7  |      | 27.6 | 19.6 | 21.6 |      |
| Level of Service                  | A    | A    | A    |      | C    | B    | C    |      |
| Approach Delay (s)                |      | 9.7  | 4.7  |      |      |      | 23.9 |      |
| Approach LOS                      |      | A    | A    |      |      |      | C    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 12.2  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.66  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 63.2% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
 5886: Capitol & 30th Street

4/4/2005



| Movement               | EBL   | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|-------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    | ↙     | ↑↑   |      |      | ↑↓    |      |      | ↑↑↓  |      |      |      |      |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0   | 4.0  |      |      | 4.0   |      |      | 4.0  |      |      |      |      |
| Lane Util. Factor      | 1.00  | 0.95 |      |      | 0.95  |      |      | 0.91 |      |      |      |      |
| Fr't                   | 1.00  | 1.00 |      |      | 0.94  |      |      | 0.98 |      |      |      |      |
| Flt Protected          | 0.95  | 1.00 |      |      | 1.00  |      |      | 0.99 |      |      |      |      |
| Satd. Flow (prot)      | 1770  | 3539 |      |      | 3339  |      |      | 4958 |      |      |      |      |
| Flt Permitted          | 0.95  | 1.00 |      |      | 1.00  |      |      | 0.99 |      |      |      |      |
| Satd. Flow (perm)      | 1770  | 3539 |      |      | 3339  |      |      | 4958 |      |      |      |      |
| Volume (vph)           | 125   | 234  | 0    | 0    | 472   | 285  | 139  | 919  | 158  | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 125   | 234  | 0    | 0    | 472   | 285  | 139  | 919  | 158  | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0     | 0    | 0    | 0    | 113   | 0    | 0    | 25   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 125   | 234  | 0    | 0    | 644   | 0    | 0    | 1191 | 0    | 0    | 0    | 0    |
| Turn Type              | Prot  |      |      |      |       |      | Perm |      |      |      |      |      |
| Protected Phases       | 7     | 4    |      |      | 8     |      |      | 2    |      |      |      |      |
| Permitted Phases       |       |      |      |      |       |      | 2    |      |      |      |      |      |
| Actuated Green, G (s)  | 15.0  | 45.0 |      |      | 27.0  |      |      | 29.0 |      |      |      |      |
| Effective Green, g (s) | 14.0  | 44.0 |      |      | 26.0  |      |      | 28.0 |      |      |      |      |
| Actuated g/C Ratio     | 0.18  | 0.55 |      |      | 0.32  |      |      | 0.35 |      |      |      |      |
| Clearance Time (s)     | 3.0   | 3.0  |      |      | 3.0   |      |      | 3.0  |      |      |      |      |
| Lane Grp Cap. (vph)    | 310   | 1946 |      |      | 1085  |      |      | 1735 |      |      |      |      |
| v/s Ratio Prot         | c0.07 | 0.07 |      |      | c0.19 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |       |      |      |      |       |      |      | 0.24 |      |      |      |      |
| v/c Ratio              | 0.40  | 0.12 |      |      | 0.59  |      |      | 0.69 |      |      |      |      |
| Uniform Delay, d1      | 29.3  | 8.7  |      |      | 22.6  |      |      | 22.2 |      |      |      |      |
| Progression Factor     | 1.07  | 0.71 |      |      | 0.05  |      |      | 0.75 |      |      |      |      |
| Incremental Delay, d2  | 3.6   | 0.1  |      |      | 1.4   |      |      | 1.3  |      |      |      |      |
| Delay (s)              | 34.9  | 6.3  |      |      | 2.5   |      |      | 18.1 |      |      |      |      |
| Level of Service       | C     | A    |      |      | A     |      |      | B    |      |      |      |      |
| Approach Delay (s)     |       | 16.2 |      |      | 2.5   |      |      | 18.1 |      |      | 0.0  |      |
| Approach LOS           |       | B    |      |      | A     |      |      | B    |      |      | A    |      |

**Intersection Summary**

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 12.7  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.59  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 63.2% | ICU Level of Service | B    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
5888: Capitol & 29th Street

4/4/2005



| Movement                          | EBL  | EBT  | EBR   | WBL   | WBT  | WBR                  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|-------|-------|------|----------------------|------|------|------|------|------|------|
| Lane Configurations               |      | ↑↑   |       | ↖     | ↑↑   |                      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900  | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0  |       | 4.0   | 4.0  |                      |      |      |      |      | 4.0  |      |
| Lane Util. Factor                 |      | 0.95 |       | 1.00  | 0.95 |                      |      |      |      |      | 0.91 |      |
| Frt                               |      | 0.94 |       | 1.00  | 1.00 |                      |      |      |      |      | 0.99 |      |
| Flt Protected                     |      | 1.00 |       | 0.95  | 1.00 |                      |      |      |      |      | 0.99 |      |
| Satd. Flow (prot)                 |      | 3155 |       | 1770  | 3539 |                      |      |      |      |      | 4834 |      |
| Flt Permitted                     |      | 1.00 |       | 0.51  | 1.00 |                      |      |      |      |      | 0.99 |      |
| Satd. Flow (perm)                 |      | 3155 |       | 959   | 3539 |                      |      |      |      |      | 4834 |      |
| Volume (vph)                      | 0    | 214  | 149   | 162   | 482  | 0                    | 0    | 0    | 0    | 147  | 1112 | 103  |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 214  | 149   | 162   | 482  | 0                    | 0    | 0    | 0    | 147  | 1112 | 103  |
| RTOR Reduction (vph)              | 0    | 24   | 0     | 0     | 0    | 0                    | 0    | 0    | 0    | 0    | 12   | 0    |
| Lane Group Flow (vph)             | 0    | 339  | 0     | 162   | 482  | 0                    | 0    | 0    | 0    | 0    | 1350 | 0    |
| Parking (#/hr)                    |      | 0    | 0     |       |      |                      |      |      |      |      | 0    | 0    |
| Turn Type                         |      |      |       | Perm  |      |                      |      |      |      |      | Perm |      |
| Protected Phases                  |      | 4    |       |       | 8    |                      |      |      |      |      |      | 6    |
| Permitted Phases                  |      |      |       | 8     |      |                      |      |      |      | 6    |      |      |
| Actuated Green, G (s)             |      | 36.0 |       | 36.0  | 36.0 |                      |      |      |      |      | 38.0 |      |
| Effective Green, g (s)            |      | 35.0 |       | 35.0  | 35.0 |                      |      |      |      |      | 37.0 |      |
| Actuated g/C Ratio                |      | 0.44 |       | 0.44  | 0.44 |                      |      |      |      |      | 0.46 |      |
| Clearance Time (s)                |      | 3.0  |       | 3.0   | 3.0  |                      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |      | 1380 |       | 420   | 1548 |                      |      |      |      |      | 2236 |      |
| v/s Ratio Prot                    |      | 0.11 |       |       | 0.14 |                      |      |      |      |      |      |      |
| v/s Ratio Perm                    |      |      |       | c0.17 |      |                      |      |      |      |      | 0.28 |      |
| v/c Ratio                         |      | 0.25 |       | 0.39  | 0.31 |                      |      |      |      |      | 0.60 |      |
| Uniform Delay, d1                 |      | 14.2 |       | 15.2  | 14.7 |                      |      |      |      |      | 16.0 |      |
| Progression Factor                |      | 0.43 |       | 0.63  | 0.65 |                      |      |      |      |      | 0.47 |      |
| Incremental Delay, d2             |      | 0.4  |       | 2.1   | 0.4  |                      |      |      |      |      | 1.0  |      |
| Delay (s)                         |      | 6.4  |       | 11.7  | 9.9  |                      |      |      |      |      | 8.6  |      |
| Level of Service                  |      | A    |       | B     | A    |                      |      |      |      |      | A    |      |
| Approach Delay (s)                |      | 6.4  |       |       | 10.4 |                      |      | 0.0  |      |      | 8.6  |      |
| Approach LOS                      |      | A    |       |       | B    |                      |      | A    |      |      | A    |      |
| <b>Intersection Summary</b>       |      |      |       |       |      |                      |      |      |      |      |      |      |
| HCM Average Control Delay         |      |      | 8.7   |       |      | HCM Level of Service |      |      |      |      | A    |      |
| HCM Volume to Capacity ratio      |      |      | 0.50  |       |      |                      |      |      |      |      |      |      |
| Actuated Cycle Length (s)         |      |      | 80.0  |       |      | Sum of lost time (s) |      |      |      | 8.0  |      |      |
| Intersection Capacity Utilization |      |      | 63.2% |       |      | ICU Level of Service |      |      |      | B    |      |      |
| Analysis Period (min)             |      |      | 15    |       |      |                      |      |      |      |      |      |      |
| c Critical Lane Group             |      |      |       |       |      |                      |      |      |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
5890: Capitol & 26th Street

4/4/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|-------|------|------|------|------|
| Lane Configurations    |      |      |      |      |       |      |      |       |      |      |      |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0  | 4.0  |      | 4.0  | 4.0   |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor      | 1.00 | 1.00 |      | 1.00 | 1.00  |      |      | 1.00  |      |      | 1.00 |      |
| Frt                    | 1.00 | 1.00 |      | 1.00 | 0.99  |      |      | 0.97  |      |      | 0.98 |      |
| Fit Protected          | 0.95 | 1.00 |      | 0.95 | 1.00  |      |      | 0.99  |      |      | 0.99 |      |
| Satd. Flow (prot)      | 1770 | 1671 |      | 1770 | 1667  |      |      | 1610  |      |      | 1626 |      |
| Fit Permitted          | 0.33 | 1.00 |      | 0.53 | 1.00  |      |      | 0.98  |      |      | 0.96 |      |
| Satd. Flow (perm)      | 606  | 1671 |      | 996  | 1667  |      |      | 1592  |      |      | 1576 |      |
| Volume (vph)           | 9    | 324  | 7    | 6    | 586   | 23   | 6    | 37    | 15   | 9    | 23   | 5    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 9    | 324  | 7    | 6    | 586   | 23   | 6    | 37    | 15   | 9    | 23   | 5    |
| RTOR Reduction (vph)   | 0    | 1    | 0    | 0    | 3     | 0    | 0    | 11    | 0    | 0    | 4    | 0    |
| Lane Group Flow (vph)  | 9    | 330  | 0    | 6    | 607   | 0    | 0    | 47    | 0    | 0    | 33   | 0    |
| Parking (#/hr)         |      | 0    | 0    |      | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      |      | Perm |       |      | Perm |       |      | Perm |      |      |
| Protected Phases       |      | 4    |      |      | 8     |      |      | 2     |      |      | 6    |      |
| Permitted Phases       | 4    |      |      | 8    |       |      | 2    |       |      | 6    |      |      |
| Actuated Green, G (s)  | 36.0 | 36.0 |      | 36.0 | 36.0  |      |      | 18.0  |      |      | 18.0 |      |
| Effective Green, g (s) | 35.0 | 35.0 |      | 35.0 | 35.0  |      |      | 17.0  |      |      | 17.0 |      |
| Actuated g/C Ratio     | 0.58 | 0.58 |      | 0.58 | 0.58  |      |      | 0.28  |      |      | 0.28 |      |
| Clearance Time (s)     | 3.0  | 3.0  |      | 3.0  | 3.0   |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)     | 354  | 975  |      | 581  | 972   |      |      | 451   |      |      | 447  |      |
| v/s Ratio Prot         |      | 0.20 |      |      | c0.36 |      |      |       |      |      |      |      |
| v/s Ratio Perm         | 0.01 |      |      | 0.01 |       |      |      | c0.03 |      |      | 0.02 |      |
| v/c Ratio              | 0.03 | 0.34 |      | 0.01 | 0.62  |      |      | 0.10  |      |      | 0.07 |      |
| Uniform Delay, d1      | 5.3  | 6.5  |      | 5.2  | 8.2   |      |      | 15.9  |      |      | 15.7 |      |
| Progression Factor     | 1.00 | 1.00 |      | 1.00 | 1.00  |      |      | 1.00  |      |      | 0.69 |      |
| Incremental Delay, d2  | 0.1  | 0.9  |      | 0.0  | 3.0   |      |      | 0.5   |      |      | 0.3  |      |
| Delay (s)              | 5.4  | 7.4  |      | 5.3  | 11.2  |      |      | 16.3  |      |      | 11.2 |      |
| Level of Service       | A    | A    |      | A    | B     |      |      | B     |      |      | B    |      |
| Approach Delay (s)     |      | 7.4  |      |      | 11.2  |      |      | 16.3  |      |      | 11.2 |      |
| Approach LOS           |      | A    |      |      | B     |      |      | B     |      |      | B    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.2  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.45  |                      |     |
| Actuated Cycle Length (s)         | 60.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 42.7% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

# HCM Signalized Intersection Capacity Analysis

6481: J Street & 28th Street

4/4/2005



| Movement                          | EBL  | EBT   | EBR    | WBL  | WBT  | WBR  | NBL  | NBT                   | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|-------|--------|------|------|------|------|-----------------------|------|------|------|------|
| Lane Configurations               |      | ↑↑↑   |        |      |      | ↑    |      | ↑                     |      |      | ↑    |      |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900   | 1900 | 1900 | 1900 | 1900 | 1900                  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0   |        |      |      |      |      | 4.0                   |      |      | 4.0  |      |
| Lane Util. Factor                 |      | 0.91  |        |      |      |      |      | 1.00                  |      |      | 1.00 |      |
| Fr't                              |      | 1.00  |        |      |      |      |      | 0.93                  |      |      | 1.00 |      |
| Flt Protected                     |      | 1.00  |        |      |      |      |      | 1.00                  |      |      | 0.99 |      |
| Satd. Flow (prot)                 |      | 4890  |        |      |      |      |      | 1559                  |      |      | 1654 |      |
| Flt Permitted                     |      | 1.00  |        |      |      |      |      | 1.00                  |      |      | 0.93 |      |
| Satd. Flow (perm)                 |      | 4890  |        |      |      |      |      | 1559                  |      |      | 1563 |      |
| Volume (vph)                      | 27   | 1121  | 32     | 0    | 0    | 0    | 0    | 87                    | 94   | 14   | 38   | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00   | 1.00 | 1.00 | 1.00 | 1.00 | 1.00                  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 27   | 1121  | 32     | 0    | 0    | 0    | 0    | 87                    | 94   | 14   | 38   | 0    |
| RTOR Reduction (vph)              | 0    | 3     | 0      | 0    | 0    | 0    | 0    | 36                    | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 0    | 1177  | 0      | 0    | 0    | 0    | 0    | 145                   | 0    | 0    | 52   | 0    |
| Parking (#/hr)                    | 0    | 0     | 0      |      |      |      |      | 0                     | 0    | 0    | 0    | 0    |
| Turn Type                         | Perm |       | custom |      |      |      |      | Perm                  |      |      |      |      |
| Protected Phases                  |      | 4     |        |      |      |      |      | 2                     |      |      | 6    |      |
| Permitted Phases                  | 4    |       |        |      |      |      | 8    |                       |      | 6    |      |      |
| Actuated Green, G (s)             |      | 42.0  |        |      |      |      |      | 32.0                  |      |      | 32.0 |      |
| Effective Green, g (s)            |      | 41.0  |        |      |      |      |      | 31.0                  |      |      | 31.0 |      |
| Actuated g/C Ratio                |      | 0.51  |        |      |      |      |      | 0.39                  |      |      | 0.39 |      |
| Clearance Time (s)                |      | 3.0   |        |      |      |      |      | 3.0                   |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |      | 2506  |        |      |      |      |      | 604                   |      |      | 606  |      |
| v/s Ratio Prot                    |      |       |        |      |      |      |      | c0.09                 |      |      |      |      |
| v/s Ratio Perm                    |      | 0.24  |        |      |      |      |      |                       |      |      | 0.03 |      |
| v/c Ratio                         |      | 0.47  |        |      |      |      |      | 0.24                  |      |      | 0.09 |      |
| Uniform Delay, d1                 |      | 12.5  |        |      |      |      |      | 16.6                  |      |      | 15.5 |      |
| Progression Factor                |      | 1.00  |        |      |      |      |      | 0.50                  |      |      | 1.00 |      |
| Incremental Delay, d2             |      | 0.6   |        |      |      |      |      | 0.9                   |      |      | 0.3  |      |
| Delay (s)                         |      | 13.2  |        |      |      |      |      | 9.2                   |      |      | 15.8 |      |
| Level of Service                  |      | B     |        |      |      |      |      | A                     |      |      | B    |      |
| Approach Delay (s)                |      | 13.2  |        |      | 0.0  |      |      | 9.2                   |      |      | 15.8 |      |
| Approach LOS                      |      | B     |        |      | A    |      |      | A                     |      |      | B    |      |
| <b>Intersection Summary</b>       |      |       |        |      |      |      |      |                       |      |      |      |      |
| HCM Average Control Delay         |      | 12.7  |        |      |      |      |      | HCM Level of Service  |      |      | B    |      |
| HCM Volume to Capacity ratio      |      | 0.37  |        |      |      |      |      | Sum of lost time (s)  |      |      | 8.0  |      |
| Actuated Cycle Length (s)         |      | 80.0  |        |      |      |      |      | ICU Level of Service  |      |      | A    |      |
| Intersection Capacity Utilization |      | 43.9% |        |      |      |      |      | Analysis Period (min) |      |      | 15   |      |
| c Critical Lane Group             |      |       |        |      |      |      |      |                       |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
6482: K Street & 28th Street

4/4/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|-------|------|------|------|------|
| Lane Configurations    |      | ↕    | ↗    |      | ↕     | ↗    |      | ↕     | ↗    |      | ↕    | ↗    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  |      | 4.0   | 4.0  |      | 4.0   | 4.0  |      | 4.0  | 4.0  |
| Lane Util. Factor      |      | 1.00 | 1.00 |      | 1.00  | 1.00 |      | 1.00  | 1.00 |      | 1.00 | 1.00 |
| Frt                    |      | 1.00 | 0.85 |      | 1.00  | 0.85 |      | 1.00  | 0.85 |      | 1.00 | 0.85 |
| Flt Protected          |      | 1.00 | 1.00 |      | 1.00  | 1.00 |      | 0.99  | 1.00 |      | 0.99 | 1.00 |
| Satd. Flow (prot)      |      | 1670 | 1425 |      | 1674  | 1425 |      | 1658  | 1425 |      | 1657 | 1425 |
| Flt Permitted          |      | 0.95 | 1.00 |      | 0.99  | 1.00 |      | 0.92  | 1.00 |      | 0.92 | 1.00 |
| Satd. Flow (perm)      |      | 1595 | 1425 |      | 1664  | 1425 |      | 1549  | 1425 |      | 1540 | 1425 |
| Volume (vph)           | 13   | 153  | 17   | 19   | 692   | 100  | 36   | 123   | 116  | 24   | 76   | 8    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 13   | 153  | 17   | 19   | 692   | 100  | 36   | 123   | 116  | 24   | 76   | 8    |
| RTOR Reduction (vph)   | 0    | 0    | 6    | 0    | 0     | 22   | 0    | 0     | 88   | 0    | 0    | 6    |
| Lane Group Flow (vph)  | 0    | 166  | 11   | 0    | 711   | 78   | 0    | 159   | 28   | 0    | 100  | 2    |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      | Perm | Perm |       | Perm | Perm |       | Perm | Perm |      | Perm |
| Protected Phases       |      | 4    |      |      | 8     |      |      | 2     |      |      | 6    |      |
| Permitted Phases       | 4    |      | 4    | 8    |       | 8    | 2    |       | 2    | 6    |      | 6    |
| Actuated Green, G (s)  |      | 54.0 | 54.0 |      | 54.0  | 54.0 |      | 20.0  | 20.0 |      | 20.0 | 20.0 |
| Effective Green, g (s) |      | 53.0 | 53.0 |      | 53.0  | 53.0 |      | 19.0  | 19.0 |      | 19.0 | 19.0 |
| Actuated g/C Ratio     |      | 0.66 | 0.66 |      | 0.66  | 0.66 |      | 0.24  | 0.24 |      | 0.24 | 0.24 |
| Clearance Time (s)     |      | 3.0  | 3.0  |      | 3.0   | 3.0  |      | 3.0   | 3.0  |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |      | 1057 | 944  |      | 1102  | 944  |      | 368   | 338  |      | 366  | 338  |
| v/s Ratio Prot         |      |      |      |      |       |      |      |       |      |      |      |      |
| v/s Ratio Perm         |      | 0.10 | 0.01 |      | c0.43 | 0.06 |      | c0.10 | 0.02 |      | 0.06 | 0.00 |
| v/c Ratio              |      | 0.16 | 0.01 |      | 0.65  | 0.08 |      | 0.43  | 0.08 |      | 0.27 | 0.01 |
| Uniform Delay, d1      |      | 5.1  | 4.6  |      | 8.0   | 4.8  |      | 25.9  | 23.7 |      | 24.9 | 23.3 |
| Progression Factor     |      | 1.00 | 1.00 |      | 0.59  | 0.02 |      | 0.97  | 1.15 |      | 0.92 | 0.84 |
| Incremental Delay, d2  |      | 0.3  | 0.0  |      | 2.4   | 0.1  |      | 3.5   | 0.5  |      | 1.8  | 0.0  |
| Delay (s)              |      | 5.4  | 4.6  |      | 7.2   | 0.2  |      | 28.6  | 27.8 |      | 24.7 | 19.7 |
| Level of Service       |      | A    | A    |      | A     | A    |      | C     | C    |      | C    | B    |
| Approach Delay (s)     |      | 5.3  |      |      | 6.3   |      |      | 28.3  |      |      | 24.3 |      |
| Approach LOS           |      | A    |      |      | A     |      |      | C     |      |      | C    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 12.0  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.59  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 73.4% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
6483: L Street & 28th Street

4/4/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      |      | 4.0  |      |      | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00 |      |      | 1.00 |      |      | 1.00 |      |      | 1.00 |      |
| Frt                    |      | 1.00 |      |      | 0.99 |      |      | 0.99 |      |      | 0.98 |      |
| Flt Protected          |      | 0.99 |      |      | 1.00 |      |      | 0.99 |      |      | 0.99 |      |
| Satd. Flow (prot)      |      | 1664 |      |      | 1648 |      |      | 1644 |      |      | 1632 |      |
| Flt Permitted          |      | 0.90 |      |      | 0.98 |      |      | 0.92 |      |      | 0.97 |      |
| Satd. Flow (perm)      |      | 1504 |      |      | 1614 |      |      | 1527 |      |      | 1591 |      |
| Volume (vph)           | 57   | 316  | 0    | 20   | 344  | 44   | 45   | 131  | 10   | 13   | 85   | 18   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 57   | 316  | 0    | 20   | 344  | 44   | 45   | 131  | 10   | 13   | 85   | 18   |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 5    | 0    | 0    | 3    | 0    | 0    | 8    | 0    |
| Lane Group Flow (vph)  | 0    | 373  | 0    | 0    | 403  | 0    | 0    | 184  | 0    | 0    | 108  | 0    |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      | Perm |      | Perm |      | Perm |      | Perm |      | Perm |      |
| Protected Phases       | 2    |      | 6    |      | 6    |      | 3    |      | 3    |      | 7    |      |
| Permitted Phases       | 2    |      | 6    |      | 6    |      | 3    |      | 3    |      | 7    |      |
| Actuated Green, G (s)  | 43.0 |      | 43.0 |      | 43.0 |      | 31.0 |      | 31.0 |      | 31.0 |      |
| Effective Green, g (s) | 42.0 |      | 42.0 |      | 42.0 |      | 30.0 |      | 30.0 |      | 30.0 |      |
| Actuated g/C Ratio     | 0.52 |      | 0.52 |      | 0.52 |      | 0.38 |      | 0.38 |      | 0.38 |      |
| Clearance Time (s)     | 3.0  |      | 3.0  |      | 3.0  |      | 3.0  |      | 3.0  |      | 3.0  |      |
| Lane Grp Cap (vph)     | 790  |      | 847  |      | 847  |      | 573  |      | 573  |      | 597  |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         | 0.25 |      | 0.25 |      | 0.25 |      | 0.12 |      | 0.12 |      | 0.07 |      |
| v/c Ratio              | 0.47 |      | 0.47 |      | 0.48 |      | 0.32 |      | 0.32 |      | 0.18 |      |
| Uniform Delay, d1      | 12.0 |      | 12.0 |      | 12.0 |      | 17.8 |      | 17.8 |      | 16.8 |      |
| Progression Factor     | 1.00 |      | 1.00 |      | 0.44 |      | 0.51 |      | 0.51 |      | 0.39 |      |
| Incremental Delay, d2  | 2.0  |      | 2.0  |      | 1.5  |      | 1.4  |      | 1.4  |      | 0.6  |      |
| Delay (s)              | 14.0 |      | 14.0 |      | 6.8  |      | 10.5 |      | 10.5 |      | 7.1  |      |
| Level of Service       | B    |      | B    |      | A    |      | B    |      | B    |      | A    |      |
| Approach Delay (s)     | 14.0 |      | 14.0 |      | 6.8  |      | 10.5 |      | 10.5 |      | 7.1  |      |
| Approach LOS           | B    |      | B    |      | A    |      | B    |      | B    |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 9.9   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.41  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 61.4% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

# HCM Signalized Intersection Capacity Analysis

6484: Capitol & 28th Street

4/4/2005



| Movement                  | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|---------------------------|------|-------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations       |      | ↕     |      |      | ↕    |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)        | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |      | 4.0   |      |      | 4.0  |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor         |      | 1.00  |      |      | 0.95 |      |      | 1.00  |      |      | 1.00 |      |
| Fr <sub>t</sub>           |      | 0.98  |      |      | 0.99 |      |      | 0.98  |      |      | 0.98 |      |
| Fl <sub>t</sub> Protected |      | 1.00  |      |      | 1.00 |      |      | 0.99  |      |      | 0.98 |      |
| Satd. Flow (prot)         |      | 1645  |      |      | 3313 |      |      | 1632  |      |      | 1618 |      |
| Fl <sub>t</sub> Permitted |      | 0.95  |      |      | 0.93 |      |      | 0.95  |      |      | 0.88 |      |
| Satd. Flow (perm)         |      | 1563  |      |      | 3098 |      |      | 1564  |      |      | 1452 |      |
| Volume (vph)              | 24   | 311   | 44   | 26   | 576  | 55   | 34   | 150   | 30   | 32   | 53   | 14   |
| Peak-hour factor, PHF     | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 24   | 311   | 44   | 26   | 576  | 55   | 34   | 150   | 30   | 32   | 53   | 14   |
| RTOR Reduction (vph)      | 0    | 6     | 0    | 0    | 9    | 0    | 0    | 8     | 0    | 0    | 8    | 0    |
| Lane Group Flow (vph)     | 0    | 373   | 0    | 0    | 648  | 0    | 0    | 207   | 0    | 0    | 92   | 0    |
| Parking (#/hr)            | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type                 | Perm |       |      | Perm |      |      | Perm |       |      | Perm |      |      |
| Protected Phases          |      | 4     |      |      | 8    |      |      | 2     |      |      | 6    |      |
| Permitted Phases          | 4    |       |      | 8    |      |      | 2    |       |      | 6    |      |      |
| Actuated Green, G (s)     |      | 43.0  |      |      | 43.0 |      |      | 31.0  |      |      | 31.0 |      |
| Effective Green, g (s)    |      | 42.0  |      |      | 42.0 |      |      | 30.0  |      |      | 30.0 |      |
| Actuated g/C Ratio        |      | 0.52  |      |      | 0.52 |      |      | 0.38  |      |      | 0.38 |      |
| Clearance Time (s)        |      | 3.0   |      |      | 3.0  |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)        |      | 821   |      |      | 1626 |      |      | 587   |      |      | 545  |      |
| v/s Ratio Prot            |      |       |      |      |      |      |      |       |      |      |      |      |
| v/s Ratio Perm            |      | c0.24 |      |      | 0.21 |      |      | c0.13 |      |      | 0.06 |      |
| v/c Ratio                 |      | 0.45  |      |      | 0.40 |      |      | 0.35  |      |      | 0.17 |      |
| Uniform Delay, d1         |      | 11.9  |      |      | 11.4 |      |      | 18.0  |      |      | 16.7 |      |
| Progression Factor        |      | 1.00  |      |      | 0.49 |      |      | 1.04  |      |      | 0.54 |      |
| Incremental Delay, d2     |      | 1.8   |      |      | 0.7  |      |      | 1.4   |      |      | 0.7  |      |
| Delay (s)                 |      | 13.7  |      |      | 6.3  |      |      | 20.1  |      |      | 9.7  |      |
| Level of Service          |      | B     |      |      | A    |      |      | C     |      |      | A    |      |
| Approach Delay (s)        |      | 13.7  |      |      | 6.3  |      |      | 20.1  |      |      | 9.7  |      |
| Approach LOS              |      | B     |      |      | A    |      |      | C     |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.8  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.41  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 58.6% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |
| c: Critical Lane Group            |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
6485: N Street & 28th Street

4/4/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|-------|------|------|------|------|
| Lane Configurations    |      | ↕    |      |      | ↕     |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      |      | 4.0   |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00 |      |      | 1.00  |      |      | 1.00  |      |      | 1.00 |      |
| Frt                    |      | 1.00 |      |      | 0.98  |      |      | 0.96  |      |      | 0.98 |      |
| Flt Protected          |      | 0.99 |      |      | 1.00  |      |      | 0.99  |      |      | 0.98 |      |
| Satd. Flow (prot)      |      | 1655 |      |      | 1646  |      |      | 1605  |      |      | 1607 |      |
| Flt Permitted          |      | 0.84 |      |      | 0.98  |      |      | 0.96  |      |      | 0.77 |      |
| Satd. Flow (perm)      |      | 1404 |      |      | 1617  |      |      | 1550  |      |      | 1268 |      |
| Volume (vph)           | 37   | 166  | 6    | 38   | 661   | 93   | 22   | 112   | 51   | 57   | 49   | 18   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 37   | 166  | 6    | 38   | 661   | 93   | 22   | 112   | 51   | 57   | 49   | 18   |
| RTOR Reduction (vph)   | 0    | 1    | 0    | 0    | 6     | 0    | 0    | 17    | 0    | 0    | 8    | 0    |
| Lane Group Flow (vph)  | 0    | 208  |      | 0    | 786   |      | 0    | 168   |      | 0    | 116  |      |
| Parking (#/hr)         | 0    | 0    |      | 0    | 0     |      | 0    | 0     |      | 0    | 0    |      |
| Turn Type              | Perm |      |      | Perm |       |      | Perm |       |      | Perm |      |      |
| Protected Phases       |      | 2    |      |      | 6     |      |      | 8     |      |      | 4    |      |
| Permitted Phases       | 2    |      |      | 6    |       |      | 8    |       |      | 4    |      |      |
| Actuated Green, G (s)  |      | 56.0 |      |      | 56.0  |      |      | 18.0  |      |      | 18.0 |      |
| Effective Green, g (s) |      | 55.0 |      |      | 55.0  |      |      | 17.0  |      |      | 17.0 |      |
| Actuated g/C Ratio     |      | 0.69 |      |      | 0.69  |      |      | 0.21  |      |      | 0.21 |      |
| Clearance Time (s)     |      | 3.0  |      |      | 3.0   |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 965  |      |      | 1112  |      |      | 329   |      |      | 269  |      |
| v/s Ratio Prot         |      |      |      |      |       |      |      |       |      |      |      |      |
| v/s Ratio Perm         |      | 0.15 |      |      | c0.49 |      |      | c0.11 |      |      | 0.09 |      |
| v/c Ratio              |      | 0.22 |      |      | 0.71  |      |      | 0.51  |      |      | 0.43 |      |
| Uniform Delay, d1      |      | 4.6  |      |      | 7.6   |      |      | 27.8  |      |      | 27.3 |      |
| Progression Factor     |      | 1.00 |      |      | 0.75  |      |      | 1.00  |      |      | 0.89 |      |
| Incremental Delay, d2  |      | 0.5  |      |      | 1.8   |      |      | 5.5   |      |      | 4.8  |      |
| Delay (s)              |      | 5.1  |      |      | 7.5   |      |      | 33.4  |      |      | 29.0 |      |
| Level of Service       |      | A    |      |      | A     |      |      | C     |      |      | C    |      |
| Approach Delay (s)     |      | 5.1  |      |      | 7.5   |      |      | 33.4  |      |      | 29.0 |      |
| Approach LOS           |      | A    |      |      | A     |      |      | C     |      |      | C    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 12.8  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.66  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 71.1% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
6511: K Street & Alhambra

4/4/2005



| Movement                          | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations               |      | ↕    | ↗    |      | ↕    |      |      | ↕    |      |      | ↕    | ↕    |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0  | 4.0  |      | 4.0  |      |      | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor                 |      | 1.00 | 1.00 |      | 1.00 |      |      | 0.95 |      |      | 0.95 |      |
| Fr <sub>t</sub>                   |      | 1.00 | 0.85 |      | 0.99 |      |      | 0.99 |      |      | 0.96 |      |
| Fl <sub>t</sub> Protected         |      | 0.98 | 1.00 |      | 0.99 |      |      | 0.99 |      |      | 1.00 |      |
| Satd. Flow (prot)                 |      | 1827 | 1583 |      | 1822 |      |      | 3455 |      |      | 3380 |      |
| Fl <sub>t</sub> Permitted         |      | 0.91 | 1.00 |      | 0.94 |      |      | 0.58 |      |      | 0.95 |      |
| Satd. Flow (perm)                 |      | 1694 | 1583 |      | 1729 |      |      | 2031 |      |      | 3226 |      |
| Volume (vph)                      | 22   | 35   | 109  | 25   | 61   | 6    | 131  | 326  | 36   | 3    | 699  | 300  |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 22   | 35   | 109  | 25   | 61   | 6    | 131  | 326  | 36   | 3    | 699  | 300  |
| RTOR Reduction (vph)              | 0    | 0    | 71   | 0    | 3    | 0    | 0    | 7    | 0    | 0    | 59   | 0    |
| Lane Group Flow (vph)             | 0    | 57   | 38   | 0    | 89   | 0    | 0    | 486  | 0    | 0    | 943  | 0    |
| Turn Type                         | Perm |      | Perm | Perm |      |      | Perm |      |      | Perm |      |      |
| Protected Phases                  |      | 4    |      |      | 8    |      |      | 2    |      |      | 6    |      |
| Permitted Phases                  | 4    |      | 4    | 8    |      |      | 2    |      |      | 6    |      |      |
| Actuated Green, G (s)             |      | 29.0 | 29.0 |      | 29.0 |      |      | 45.0 |      |      | 45.0 |      |
| Effective Green, g (s)            |      | 28.0 | 28.0 |      | 28.0 |      |      | 44.0 |      |      | 44.0 |      |
| Actuated g/C Ratio                |      | 0.35 | 0.35 |      | 0.35 |      |      | 0.55 |      |      | 0.55 |      |
| Clearance Time (s)                |      | 3.0  | 3.0  |      | 3.0  |      |      | 3.0  |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |      | 593  | 554  |      | 605  |      |      | 1117 |      |      | 1774 |      |
| v/s Ratio Prot                    |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm                    |      | 0.03 | 0.02 |      | 0.05 |      |      | 0.24 |      |      | 0.29 |      |
| v/c Ratio                         |      | 0.10 | 0.07 |      | 0.15 |      |      | 0.43 |      |      | 0.53 |      |
| Uniform Delay, d <sub>1</sub>     |      | 17.5 | 17.3 |      | 17.8 |      |      | 10.6 |      |      | 11.4 |      |
| Progression Factor                |      | 0.56 | 0.13 |      | 1.00 |      |      | 0.45 |      |      | 0.41 |      |
| Incremental Delay, d <sub>2</sub> |      | 0.3  | 0.2  |      | 0.5  |      |      | 1.0  |      |      | 0.5  |      |
| Delay (s)                         |      | 10.1 | 2.4  |      | 18.3 |      |      | 5.8  |      |      | 5.3  |      |
| Level of Service                  |      | B    | A    |      | B    |      |      | A    |      |      | A    |      |
| Approach Delay (s)                |      | 5.1  |      |      | 18.3 |      |      | 5.8  |      |      | 5.3  |      |
| Approach LOS                      |      | A    |      |      | B    |      |      | A    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 6.1   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.38  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 64.6% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 9622: K Street & 30th Street

4/4/2005



| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations       | ↖    | ↗    |      |      | ↕     | ↗    |      | ↕↖↗  |      |      |      |      |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       | 4.0  | 4.0  |      |      | 4.0   | 4.0  |      | 4.0  |      |      |      |      |
| Lane Util. Factor         | 1.00 | 1.00 |      |      | 1.00  | 1.00 |      | 0.91 |      |      |      |      |
| Fr <sub>t</sub>           | 1.00 | 1.00 |      |      | 1.00  | 0.85 |      | 1.00 |      |      |      |      |
| Fl <sub>t</sub> Protected | 0.95 | 1.00 |      |      | 1.00  | 1.00 |      | 0.99 |      |      |      |      |
| Satd. Flow (prot)         | 1770 | 1863 |      |      | 1863  | 1583 |      | 5012 |      |      |      |      |
| Fl <sub>t</sub> Permitted | 0.39 | 1.00 |      |      | 1.00  | 1.00 |      | 0.99 |      |      |      |      |
| Satd. Flow (perm)         | 732  | 1863 |      |      | 1863  | 1583 |      | 5012 |      |      |      |      |
| Volume (vph)              | 60   | 91   | 0    | 0    | 433   | 14   | 318  | 819  | 6    | 0    | 0    | 0    |
| Peak-hour factor, PHF     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 60   | 91   | 0    | 0    | 433   | 14   | 318  | 819  | 6    | 0    | 0    | 0    |
| RTOR Reduction (vph)      | 0    | 0    | 0    | 0    | 0     | 5    | 0    | 1    | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)     | 60   | 91   | 0    | 0    | 433   | 9    | 0    | 1142 | 0    | 0    | 0    | 0    |
| Turn Type                 | Perm |      |      |      |       | Perm | Perm |      |      |      |      |      |
| Protected Phases          |      | 4    |      |      | 8     |      |      | 2    |      |      |      |      |
| Permitted Phases          | 4    |      |      |      |       | 8    | 2    |      |      |      |      |      |
| Actuated Green, G (s)     | 40.0 | 40.0 |      |      | 40.0  | 40.0 |      | 34.0 |      |      |      |      |
| Effective Green, g (s)    | 39.0 | 39.0 |      |      | 39.0  | 39.0 |      | 33.0 |      |      |      |      |
| Actuated g/C Ratio        | 0.49 | 0.49 |      |      | 0.49  | 0.49 |      | 0.41 |      |      |      |      |
| Clearance Time (s)        | 3.0  | 3.0  |      |      | 3.0   | 3.0  |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)        | 357  | 908  |      |      | 908   | 772  |      | 2067 |      |      |      |      |
| v/s Ratio Prot            |      | 0.05 |      |      | c0.23 |      |      |      |      |      |      |      |
| v/s Ratio Perm            | 0.08 |      |      |      |       | 0.01 |      | 0.23 |      |      |      |      |
| v/c Ratio                 | 0.17 | 0.10 |      |      | 0.48  | 0.01 |      | 0.55 |      |      |      |      |
| Uniform Delay, d1         | 11.4 | 11.0 |      |      | 13.7  | 10.6 |      | 17.9 |      |      |      |      |
| Progression Factor        | 1.10 | 1.09 |      |      | 1.27  | 1.23 |      | 0.30 |      |      |      |      |
| Incremental Delay, d2     | 1.0  | 0.2  |      |      | 1.6   | 0.0  |      | 1.0  |      |      |      |      |
| Delay (s)                 | 13.5 | 12.2 |      |      | 19.0  | 13.0 |      | 6.4  |      |      |      |      |
| Level of Service          | B    | B    |      |      | B     | B    |      | A    |      |      |      |      |
| Approach Delay (s)        |      | 12.7 |      |      | 18.8  |      |      | 6.4  |      |      | 0.0  |      |
| Approach LOS              |      | B    |      |      | B     |      |      | A    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.1  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.51  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 81.7% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

CUMULATIVE NO PROJECT  
WITH CENTRAL CITY TWO WAY CONVERSION

PM Peak Hour

Signalized Intersections

(pm10)



HCM Signalized Intersection Capacity Analysis  
 2004: L Street & 21th Street

4/4/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|-------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↔     |      |      | ↔    |      |      | ↔↔   |      |      |      |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      | 4.0  |      |      | 4.0  |      |      |      |      |
| Lane Util. Factor      |      | 1.00  |      |      | 1.00 |      |      | 0.95 |      |      |      |      |
| Frnt                   |      | 1.00  |      |      | 0.99 |      |      | 1.00 |      |      |      |      |
| Flt Protected          |      | 0.99  |      |      | 1.00 |      |      | 1.00 |      |      |      |      |
| Satd. Flow (prot)      |      | 1656  |      |      | 1654 |      |      | 3341 |      |      |      |      |
| Flt Permitted          |      | 0.70  |      |      | 1.00 |      |      | 1.00 |      |      |      |      |
| Satd. Flow (perm)      |      | 1181  |      |      | 1654 |      |      | 3341 |      |      |      |      |
| Volume (vph)           | 130  | 399   | 0    | 0    | 372  | 40   | 60   | 1415 | 44   | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 130  | 399   | 0    | 0    | 372  | 40   | 60   | 1415 | 44   | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0    | 0     | 0    | 0    | 6    | 0    | 0    | 3    | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 529   | 0    | 0    | 406  | 0    | 0    | 1516 | 0    | 0    | 0    | 0    |
| Parking (#/hr)         | 0    | 0     |      |      | 0    | 0    | 0    | 0    | 0    |      |      |      |
| Turn Type              |      | Perm  |      |      |      |      |      | Perm |      |      |      |      |
| Protected Phases       |      | 2     |      |      | 6    |      |      | 8    |      |      |      |      |
| Permitted Phases       | 2    |       |      |      |      |      | 8    | 8    |      |      |      |      |
| Actuated Green, G (s)  |      | 27.0  |      |      | 27.0 |      |      | 27.0 |      |      |      |      |
| Effective Green, g (s) |      | 26.0  |      |      | 26.0 |      |      | 26.0 |      |      |      |      |
| Actuated g/C Ratio     |      | 0.43  |      |      | 0.43 |      |      | 0.43 |      |      |      |      |
| Clearance Time (s)     |      | 3.0   |      |      | 3.0  |      |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)     |      | 512   |      |      | 717  |      |      | 1448 |      |      |      |      |
| v/s Ratio Prot         |      |       |      |      | 0.25 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      | c0.45 |      |      |      |      |      | 0.45 |      |      |      |      |
| v/c Ratio              |      | 1.03  |      |      | 0.57 |      |      | 1.05 |      |      |      |      |
| Uniform Delay, d1      |      | 17.0  |      |      | 12.8 |      |      | 17.0 |      |      |      |      |
| Progression Factor     |      | 0.81  |      |      | 1.30 |      |      | 1.00 |      |      |      |      |
| Incremental Delay, d2  |      | 44.8  |      |      | 3.2  |      |      | 36.9 |      |      |      |      |
| Delay (s)              |      | 58.6  |      |      | 19.9 |      |      | 53.9 |      |      |      |      |
| Level of Service       |      | E     |      |      | B    |      |      | D    |      |      |      |      |
| Approach Delay (s)     |      | 58.6  |      |      | 19.9 |      |      | 53.9 |      |      | 0.0  |      |
| Approach LOS           |      | E     |      |      | B    |      |      | D    |      |      | A    |      |

| Intersection Summary              |        |                      |     |
|-----------------------------------|--------|----------------------|-----|
| HCM Average Control Delay         | 49.2   | HCM Level of Service | D   |
| HCM Volume to Capacity ratio      | 1.04   |                      |     |
| Actuated Cycle Length (s)         | 60.0   | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 102.4% | ICU Level of Service | G   |
| Analysis Period (min)             | 15     |                      |     |
| c Critical Lane Group             |        |                      |     |

HCM Signalized Intersection Capacity Analysis  
 2012: J Street & 21th Street

4/4/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT  | WBR  | NBL  | NBT                  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|-------|------|------|------|------|----------------------|------|------|------|------|
| Lane Configurations               |      | ↑↑↑  |       |      |      |      |      | ↑↑                   |      |      |      |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0  |       |      |      |      |      | 4.0                  |      |      |      |      |
| Lane Util. Factor                 |      | 0.91 |       |      |      |      |      | 0.95                 |      |      |      |      |
| Frt                               |      | 1.00 |       |      |      |      |      | 0.98                 |      |      |      |      |
| Flt Protected                     |      | 1.00 |       |      |      |      |      | 1.00                 |      |      |      |      |
| Satd. Flow (prot)                 |      | 4906 |       |      |      |      |      | 3278                 |      |      |      |      |
| Flt Permitted                     |      | 1.00 |       |      |      |      |      | 1.00                 |      |      |      |      |
| Satd. Flow (perm)                 |      | 4906 |       |      |      |      |      | 3278                 |      |      |      |      |
| Volume (vph)                      | 79   | 1945 | 0     | 0    | 0    | 0    | 0    | 1259                 | 251  | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 79   | 1945 | 0     | 0    | 0    | 0    | 0    | 1259                 | 251  | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0    | 7    | 0     | 0    | 0    | 0    | 0    | 1                    | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 0    | 2017 | 0     | 0    | 0    | 0    | 0    | 1509                 | 0    | 0    | 0    | 0    |
| Parking (#/hr)                    | 0    | 0    |       |      |      |      |      | 0                    | 0    |      |      |      |
| Turn Type                         |      | Perm |       |      |      |      |      |                      |      |      |      |      |
| Protected Phases                  |      | 4    |       |      |      |      |      | 2                    |      |      |      |      |
| Permitted Phases                  | 4    |      |       |      |      |      |      |                      |      |      |      |      |
| Actuated Green, G (s)             |      | 25.0 |       |      |      |      |      | 29.0                 |      |      |      |      |
| Effective Green, g (s)            |      | 24.0 |       |      |      |      |      | 28.0                 |      |      |      |      |
| Actuated g/C Ratio                |      | 0.40 |       |      |      |      |      | 0.47                 |      |      |      |      |
| Clearance Time (s)                |      | 3.0  |       |      |      |      |      | 3.0                  |      |      |      |      |
| Lane Grp Cap (vph)                |      | 1962 |       |      |      |      |      | 1530                 |      |      |      |      |
| v/s Ratio Prot                    |      |      |       |      |      |      |      | c0.46                |      |      |      |      |
| v/s Ratio Perm                    |      | 0.41 |       |      |      |      |      |                      |      |      |      |      |
| v/c Ratio                         |      | 1.03 |       |      |      |      |      | 0.99                 |      |      |      |      |
| Uniform Delay, d1                 |      | 18.0 |       |      |      |      |      | 15.8                 |      |      |      |      |
| Progression Factor                |      | 0.64 |       |      |      |      |      | 0.28                 |      |      |      |      |
| Incremental Delay, d2             |      | 23.7 |       |      |      |      |      | 4.5                  |      |      |      |      |
| Delay (s)                         |      | 35.3 |       |      |      |      |      | 8.9                  |      |      |      |      |
| Level of Service                  |      | D    |       |      |      |      |      | A                    |      |      |      |      |
| Approach Delay (s)                |      | 35.3 |       |      | 0.0  |      |      | 8.9                  |      |      | 0.0  |      |
| Approach LOS                      |      | D    |       |      | A    |      |      | A                    |      |      | A    |      |
| <b>Intersection Summary</b>       |      |      |       |      |      |      |      |                      |      |      |      |      |
| HCM Average Control Delay         |      |      | 24.0  |      |      |      |      | HCM Level of Service |      |      | C    |      |
| HCM Volume to Capacity ratio      |      |      | 1.01  |      |      |      |      |                      |      |      |      |      |
| Actuated Cycle Length (s)         |      |      | 60.0  |      |      |      |      | Sum of lost time (s) |      |      | 8.0  |      |
| Intersection Capacity Utilization |      |      | 88.7% |      |      |      |      | ICU Level of Service |      |      | E    |      |
| Analysis Period (min)             |      |      | 15    |      |      |      |      |                      |      |      |      |      |
| c Critical Lane Group             |      |      |       |      |      |      |      |                      |      |      |      |      |

# HCM Signalized Intersection Capacity Analysis

2074: J Street & 19th Street

4/4/2005



| Movement                          | EBL                 | EBT   | EBR   | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR                      |
|-----------------------------------|---------------------|-------|-------|------|------|------|------|------|------|------|------|--------------------------|
| Lane Configurations               |                     | ↑↑↑   |       |      |      |      |      |      |      |      | ↑↑   |                          |
| Ideal Flow (vphpl)                | 1900                | 1900  | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900                     |
| Total Lost time (s)               |                     | 4.0   |       |      |      |      |      |      |      |      | 4.0  |                          |
| Lane Util. Factor                 |                     | 0.91  |       |      |      |      |      |      |      |      | 0.95 |                          |
| Fr <sub>t</sub>                   |                     | 0.97  |       |      |      |      |      |      |      |      | 1.00 |                          |
| Fl <sub>t</sub> Protected         |                     | 1.00  |       |      |      |      |      |      |      |      | 0.98 |                          |
| Satd. Flow (prot)                 |                     | 4746  |       |      |      |      |      |      |      |      | 3306 |                          |
| Fl <sub>t</sub> Permitted         |                     | 1.00  |       |      |      |      |      |      |      |      | 0.98 |                          |
| Satd. Flow (perm)                 |                     | 4746  |       |      |      |      |      |      |      |      | 3306 |                          |
| Volume (vph)                      | 0                   | 1757  | 526   | 0    | 0    | 0    | 0    | 0    | 0    | 206  | 399  | 0                        |
| Peak-hour factor, PHF             | 1.00                | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00                     |
| Adj. Flow (vph)                   | 0                   | 1757  | 526   | 0    | 0    | 0    | 0    | 0    | 0    | 206  | 399  | 0                        |
| RTOR Reduction (vph)              | 0                   | 72    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 13   | 0                        |
| Lane Group Flow (vph)             | 0                   | 2211  | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 592  | 0                        |
| Parking (#/hr)                    |                     | 0     | 0     |      |      |      |      |      |      | 0    | 0    |                          |
| Turn Type                         |                     |       |       |      |      |      |      |      |      | Perm |      |                          |
| Protected Phases                  |                     | 4     |       |      |      |      |      |      |      |      | 6    |                          |
| Permitted Phases                  |                     |       |       |      |      |      |      |      |      | 6    |      |                          |
| Actuated Green, G (s)             |                     | 36.0  |       |      |      |      |      |      |      |      | 18.0 |                          |
| Effective Green, g (s)            |                     | 35.0  |       |      |      |      |      |      |      |      | 17.0 |                          |
| Actuated g/C Ratio                |                     | 0.58  |       |      |      |      |      |      |      |      | 0.28 |                          |
| Clearance Time (s)                |                     | 3.0   |       |      |      |      |      |      |      |      | 3.0  |                          |
| Lane Grp Cap (vph)                |                     | 2769  |       |      |      |      |      |      |      |      | 937  |                          |
| v/s Ratio Prot                    |                     | c0.47 |       |      |      |      |      |      |      |      |      |                          |
| v/s Ratio Perm                    |                     |       |       |      |      |      |      |      |      |      | 0.18 |                          |
| v/c Ratio                         |                     | 0.80  |       |      |      |      |      |      |      |      | 0.63 |                          |
| Uniform Delay, d1                 |                     | 9.8   |       |      |      |      |      |      |      |      | 18.8 |                          |
| Progression Factor                |                     | 1.00  |       |      |      |      |      |      |      |      | 1.00 |                          |
| Incremental Delay, d2             |                     | 2.5   |       |      |      |      |      |      |      |      | 3.2  |                          |
| Delay (s)                         |                     | 12.3  |       |      |      |      |      |      |      |      | 22.0 |                          |
| Level of Service                  |                     | B     |       |      |      |      |      |      |      |      | C    |                          |
| Approach Delay (s)                |                     | 12.3  |       |      | 0.0  |      |      | 0.0  |      |      | 22.0 |                          |
| Approach LOS                      |                     | B     |       |      | A    |      |      | A    |      |      | C    |                          |
| <b>Intersection Summary</b>       |                     |       |       |      |      |      |      |      |      |      |      |                          |
| HCM Average Control Delay         |                     |       | 14.3  |      |      |      |      |      |      |      |      | HCM Level of Service B   |
| HCM Volume to Capacity ratio      |                     |       | 0.74  |      |      |      |      |      |      |      |      |                          |
| Actuated Cycle Length (s)         |                     |       | 60.0  |      |      |      |      |      |      |      |      | Sum of lost time (s) 8.0 |
| Intersection Capacity Utilization |                     |       | 69.4% |      |      |      |      |      |      |      |      | ICU Level of Service C   |
| Analysis Period (min)             |                     |       | 15    |      |      |      |      |      |      |      |      |                          |
| c                                 | Critical Lane Group |       |       |      |      |      |      |      |      |      |      |                          |

# HCM Signalized Intersection Capacity Analysis

2088: L Street & 29th Street

4/4/2005



| Movement                          | EBL                 | EBT  | EBR    | WBL  | WBT   | WBR                  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|-----------------------------------|---------------------|------|--------|------|-------|----------------------|------|------|------|------|-------|------|
| Lane Configurations               |                     |      | ↗      | ↖    | ↑     |                      |      |      |      |      | ↑↑↑   |      |
| Ideal Flow (vphpl)                | 1900                | 1900 | 1900   | 1900 | 1900  | 1900                 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)               |                     |      | 4.0    | 4.0  | 4.0   |                      |      |      |      |      | 4.0   |      |
| Lane Util. Factor                 |                     |      | 1.00   | 1.00 | 1.00  |                      |      |      |      |      | 0.91  |      |
| Frt                               |                     |      | 0.86   | 1.00 | 1.00  |                      |      |      |      |      | 0.99  |      |
| Flt Protected                     |                     |      | 1.00   | 0.95 | 1.00  |                      |      |      |      |      | 1.00  |      |
| Satd. Flow (prot)                 |                     |      | 1450   | 1770 | 1863  |                      |      |      |      |      | 4869  |      |
| Flt Permitted                     |                     |      | 1.00   | 0.95 | 1.00  |                      |      |      |      |      | 1.00  |      |
| Satd. Flow (perm)                 |                     |      | 1450   | 1770 | 1863  |                      |      |      |      |      | 4869  |      |
| Volume (vph)                      | 0                   | 0    | 342    | 253  | 459   | 0                    | 0    | 0    | 0    | 0    | 1475  | 99   |
| Peak-hour factor, PHF             | 1.00                | 1.00 | 1.00   | 1.00 | 1.00  | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)                   | 0                   | 0    | 342    | 253  | 459   | 0                    | 0    | 0    | 0    | 0    | 1475  | 99   |
| RTOR Reduction (vph)              | 0                   | 0    | 8      | 8    | 0     | 0                    | 0    | 0    | 0    | 0    | 9     | 0    |
| Lane Group Flow (vph)             | 0                   | 0    | 334    | 245  | 459   | 0                    | 0    | 0    | 0    | 0    | 1565  | 0    |
| Parking (#/hr)                    |                     |      | 0      |      |       |                      |      |      |      |      | 0     | 0    |
| Turn Type                         |                     |      | custom | Perm |       |                      |      |      |      |      |       |      |
| Protected Phases                  |                     |      |        |      | 8     |                      |      |      |      |      | 6     |      |
| Permitted Phases                  |                     |      | 4      | 8    |       |                      |      |      |      |      |       |      |
| Actuated Green, G (s)             |                     |      | 36.0   | 36.0 | 36.0  |                      |      |      |      |      | 38.0  |      |
| Effective Green, g (s)            |                     |      | 35.0   | 35.0 | 35.0  |                      |      |      |      |      | 37.0  |      |
| Actuated g/C Ratio                |                     |      | 0.44   | 0.44 | 0.44  |                      |      |      |      |      | 0.46  |      |
| Clearance Time (s)                |                     |      | 3.0    | 3.0  | 3.0   |                      |      |      |      |      | 3.0   |      |
| Lane Grp Cap (vph)                |                     |      | 634    | 774  | 815   |                      |      |      |      |      | 2252  |      |
| v/s Ratio Prot                    |                     |      |        |      | c0.25 |                      |      |      |      |      | c0.32 |      |
| v/s Ratio Perm                    |                     |      | 0.23   | 0.14 |       |                      |      |      |      |      |       |      |
| v/c Ratio                         |                     |      | 0.53   | 0.32 | 0.56  |                      |      |      |      |      | 0.69  |      |
| Uniform Delay, d1                 |                     |      | 16.4   | 14.7 | 16.8  |                      |      |      |      |      | 17.0  |      |
| Progression Factor                |                     |      | 0.45   | 0.41 | 0.53  |                      |      |      |      |      | 0.73  |      |
| Incremental Delay, d2             |                     |      | 2.5    | 1.1  | 2.7   |                      |      |      |      |      | 1.3   |      |
| Delay (s)                         |                     |      | 9.9    | 7.1  | 11.7  |                      |      |      |      |      | 13.7  |      |
| Level of Service                  |                     |      | A      | A    | B     |                      |      |      |      |      | B     |      |
| Approach Delay (s)                |                     | 9.9  |        |      | 10.1  |                      | 0.0  |      |      |      | 13.7  |      |
| Approach LOS                      |                     | A    |        |      | B     |                      | A    |      |      |      | B     |      |
| <b>Intersection Summary</b>       |                     |      |        |      |       |                      |      |      |      |      |       |      |
| HCM Average Control Delay         |                     |      | 12.2   |      |       | HCM Level of Service |      |      |      |      | B     |      |
| HCM Volume to Capacity ratio      |                     |      | 0.63   |      |       |                      |      |      |      |      |       |      |
| Actuated Cycle Length (s)         |                     |      | 80.0   |      |       | Sum of lost time (s) |      |      |      | 8.0  |       |      |
| Intersection Capacity Utilization |                     |      | 75.9%  |      |       | ICU Level of Service |      |      |      |      | D     |      |
| Analysis Period (min)             |                     |      | 15     |      |       |                      |      |      |      |      |       |      |
| c                                 | Critical Lane Group |      |        |      |       |                      |      |      |      |      |       |      |



HCM Signalized Intersection Capacity Analysis  
 2239: L Street & Alhambra

4/4/2005



| Movement                          | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations               |      |      |      |      | ↕    |      |      | ↕    |      |      | ↕    | ↕    |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      |      |      |      | 4.0  |      |      | 4.0  |      |      | 4.0  | 4.0  |
| Lane Util. Factor                 |      |      |      |      | 1.00 |      |      | 1.00 |      |      | 1.00 | 1.00 |
| Fr <sub>t</sub>                   |      |      |      |      | 0.98 |      |      | 0.97 |      |      | 1.00 | 0.85 |
| Fl <sub>t</sub> Protected         |      |      |      |      | 0.99 |      |      | 0.99 |      |      | 1.00 | 1.00 |
| Satd. Flow (prot)                 |      |      |      |      | 1618 |      |      | 1625 |      |      | 1858 | 1425 |
| Fl <sub>t</sub> Permitted         |      |      |      |      | 0.99 |      |      | 0.75 |      |      | 0.94 | 1.00 |
| Satd. Flow (perm)                 |      |      |      |      | 1618 |      |      | 1224 |      |      | 1758 | 1425 |
| Volume (vph)                      | 0    | 0    | 0    | 82   | 192  | 56   | 84   | 522  | 141  | 42   | 781  | 227  |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0    | 82   | 192  | 56   | 84   | 522  | 141  | 42   | 781  | 227  |
| RTOR Reduction (vph)              | 0    | 0    | 0    | 0    | 9    | 0    | 0    | 10   | 0    | 0    | 0    | 74   |
| Lane Group Flow (vph)             | 0    | 0    | 0    | 0    | 321  | 0    | 0    | 737  | 0    | 0    | 823  | 153  |
| Parking (#/hr)                    |      |      |      | 0    | 0    | 0    | 0    | 0    | 0    |      |      | 0    |
| Turn Type                         |      |      |      | Perm |      |      | Perm |      |      | Perm |      | Perm |
| Protected Phases                  |      |      |      |      | 8    |      |      | 2    |      |      | 6    |      |
| Permitted Phases                  |      |      |      | 8    |      |      | 2    |      |      | 6    |      | 6    |
| Actuated Green, G (s)             |      |      |      |      | 19.0 |      |      | 55.0 |      |      | 55.0 | 55.0 |
| Effective Green, g (s)            |      |      |      |      | 18.0 |      |      | 54.0 |      |      | 54.0 | 54.0 |
| Actuated g/C Ratio                |      |      |      |      | 0.22 |      |      | 0.68 |      |      | 0.68 | 0.68 |
| Clearance Time (s)                |      |      |      |      | 3.0  |      |      | 3.0  |      |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)                |      |      |      |      | 364  |      |      | 826  |      |      | 1187 | 962  |
| v/s Ratio Prot                    |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm                    |      |      |      |      | 0.20 |      |      | 0.60 |      |      | 0.47 | 0.11 |
| v/c Ratio                         |      |      |      |      | 0.88 |      |      | 0.89 |      |      | 0.69 | 0.16 |
| Uniform Delay, d <sub>1</sub>     |      |      |      |      | 30.0 |      |      | 10.6 |      |      | 7.9  | 4.7  |
| Progression Factor                |      |      |      |      | 1.00 |      |      | 0.81 |      |      | 1.06 | 0.51 |
| Incremental Delay, d <sub>2</sub> |      |      |      |      | 25.0 |      |      | 8.3  |      |      | 2.9  | 0.3  |
| Delay (s)                         |      |      |      |      | 54.9 |      |      | 17.0 |      |      | 11.3 | 2.7  |
| Level of Service                  |      |      |      |      | D    |      |      | B    |      |      | B    | A    |
| Approach Delay (s)                |      | 0.0  |      |      | 54.9 |      |      | 17.0 |      |      | 9.4  |      |
| Approach LOS                      |      | A    |      |      | D    |      |      | B    |      |      | A    |      |

| Intersection Summary              |        |                      |     |
|-----------------------------------|--------|----------------------|-----|
| HCM Average Control Delay         | 19.1   | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.89   |                      |     |
| Actuated Cycle Length (s)         | 80.0   | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 112.2% | ICU Level of Service | H   |
| Analysis Period (min)             | 15     |                      |     |
| c Critical Lane Group             |        |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3426: L Street & 19th Street

4/4/2005



| Movement                          | EBL  | EBT   | EBR  | WBL  | WBT                  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|-------|------|------|----------------------|------|------|------|------|------|------|------|
| Lane Configurations               |      | ↖     |      |      | ↗                    |      |      |      |      |      | ↕    |      |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0   |      |      | 4.0                  |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor                 |      | 1.00  |      |      | 1.00                 |      |      |      |      |      | 0.95 |      |
| Frt                               |      | 0.97  |      |      | 1.00                 |      |      |      |      |      | 1.00 |      |
| Flt Protected                     |      | 1.00  |      |      | 0.99                 |      |      |      |      |      | 0.99 |      |
| Satd. Flow (prot)                 |      | 1630  |      |      | 1655                 |      |      |      |      |      | 3308 |      |
| Flt Permitted                     |      | 1.00  |      |      | 0.86                 |      |      |      |      |      | 0.99 |      |
| Satd. Flow (perm)                 |      | 1630  |      |      | 1435                 |      |      |      |      |      | 3308 |      |
| Volume (vph)                      | 0    | 196   | 50   | 118  | 347                  | 0    | 0    | 0    | 0    | 314  | 738  | 12   |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00 | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 196   | 50   | 118  | 347                  | 0    | 0    | 0    | 0    | 314  | 738  | 12   |
| RTOR Reduction (vph)              | 0    | 15    | 0    | 0    | 0                    | 0    | 0    | 0    | 0    | 0    | 1    | 0    |
| Lane Group Flow (vph)             | 0    | 231   | 0    | 0    | 465                  | 0    | 0    | 0    | 0    | 0    | 1063 | 0    |
| Parking (#/hr)                    |      | 0     | 0    | 0    | 0                    |      |      |      |      | 0    | 0    | 0    |
| Turn Type                         |      |       |      | Perm |                      |      |      |      |      |      | Perm |      |
| Protected Phases                  |      | 2     |      |      | 6                    |      |      |      |      |      | 4    |      |
| Permitted Phases                  |      |       |      | 6    |                      | 6    |      |      |      | 4    |      | 4    |
| Actuated Green, G (s)             |      | 28.0  |      |      | 28.0                 |      |      |      |      |      | 26.0 |      |
| Effective Green, g (s)            |      | 27.0  |      |      | 27.0                 |      |      |      |      |      | 25.0 |      |
| Actuated g/C Ratio                |      | 0.45  |      |      | 0.45                 |      |      |      |      |      | 0.42 |      |
| Clearance Time (s)                |      | 3.0   |      |      | 3.0                  |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |      | 734   |      |      | 646                  |      |      |      |      |      | 1378 |      |
| v/s Ratio Prot                    |      | 0.14  |      |      |                      |      |      |      |      |      |      |      |
| v/s Ratio Perm                    |      |       |      |      | 0.32                 |      |      |      |      |      | 0.32 |      |
| v/c Ratio                         |      | 0.31  |      |      | 0.72                 |      |      |      |      |      | 0.77 |      |
| Uniform Delay, d1                 |      | 10.6  |      |      | 13.4                 |      |      |      |      |      | 15.0 |      |
| Progression Factor                |      | 1.00  |      |      | 0.35                 |      |      |      |      |      | 0.80 |      |
| Incremental Delay, d2             |      | 1.1   |      |      | 5.6                  |      |      |      |      |      | 3.3  |      |
| Delay (s)                         |      | 11.7  |      |      | 10.3                 |      |      |      |      |      | 15.2 |      |
| Level of Service                  |      | B     |      |      | B                    |      |      |      |      |      | B    |      |
| Approach Delay (s)                |      | 11.7  |      |      | 10.3                 |      |      | 0.0  |      |      | 15.2 |      |
| Approach LOS                      |      | B     |      |      | B                    |      |      | A    |      |      | B    |      |
| <b>Intersection Summary</b>       |      |       |      |      |                      |      |      |      |      |      |      |      |
| HCM Average Control Delay         |      | 13.5  |      |      | HCM Level of Service |      |      | B    |      |      |      |      |
| HCM Volume to Capacity ratio      |      | 0.74  |      |      |                      |      |      |      |      |      |      |      |
| Actuated Cycle Length (s)         |      | 60.0  |      |      | Sum of lost time (s) |      |      | 8.0  |      |      |      |      |
| Intersection Capacity Utilization |      | 78.0% |      |      | ICU Level of Service |      |      | D    |      |      |      |      |
| Analysis Period (min)             |      | 15    |      |      |                      |      |      |      |      |      |      |      |
| c Critical Lane Group             |      |       |      |      |                      |      |      |      |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
 3427: L Street & 26th Street

4/4/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|-------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations    |      | ↕     |      |      | ↕    |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      | 4.0  |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00  |      |      | 1.00 |      |      | 1.00  |      |      | 1.00 |      |
| Fr't                   |      | 1.00  |      |      | 0.99 |      |      | 1.00  |      |      | 0.97 |      |
| Flt Protected          |      | 1.00  |      |      | 1.00 |      |      | 0.98  |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 1674  |      |      | 1650 |      |      | 1650  |      |      | 1615 |      |
| Flt Permitted          |      | 1.00  |      |      | 0.96 |      |      | 0.92  |      |      | 0.99 |      |
| Satd. Flow (perm)      |      | 1673  |      |      | 1599 |      |      | 1550  |      |      | 1608 |      |
| Volume (vph)           | 3    | 461   | 4    | 14   | 146  | 15   | 24   | 52    | 0    | 4    | 58   | 21   |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 3    | 461   | 4    | 14   | 146  | 15   | 24   | 52    | 0    | 4    | 58   | 21   |
| RTOR Reduction (vph)   | 0    | 0     | 0    | 0    | 6    | 0    | 0    | 0     | 0    | 0    | 14   | 0    |
| Lane Group Flow (vph)  | 0    | 468   | 0    | 0    | 169  | 0    | 0    | 76    | 0    | 0    | 69   | 0    |
| Parking (#/hr)         | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |       |      | Perm |      |      | Perm |       |      | Perm |      |      |
| Protected Phases       |      | 4     |      |      | 8    |      |      | 2     |      |      | 6    |      |
| Permitted Phases       | 4    |       |      | 8    |      |      | 2    |       |      | 6    |      |      |
| Actuated Green, G (s)  |      | 33.0  |      |      | 33.0 |      |      | 21.0  |      |      | 21.0 |      |
| Effective Green, g (s) |      | 32.0  |      |      | 32.0 |      |      | 20.0  |      |      | 20.0 |      |
| Actuated g/C Ratio     |      | 0.53  |      |      | 0.53 |      |      | 0.33  |      |      | 0.33 |      |
| Clearance Time (s)     |      | 3.0   |      |      | 3.0  |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 892   |      |      | 853  |      |      | 517   |      |      | 536  |      |
| v/s Ratio Prot         |      |       |      |      |      |      |      |       |      |      |      |      |
| v/s Ratio Perm         |      | c0.28 |      |      | 0.11 |      |      | c0.05 |      |      | 0.04 |      |
| v/c Ratio              |      | 0.52  |      |      | 0.20 |      |      | 0.15  |      |      | 0.13 |      |
| Uniform Delay, d1      |      | 9.1   |      |      | 7.3  |      |      | 14.0  |      |      | 13.9 |      |
| Progression Factor     |      | 0.17  |      |      | 1.00 |      |      | 0.73  |      |      | 1.00 |      |
| Incremental Delay, d2  |      | 0.6   |      |      | 0.5  |      |      | 0.6   |      |      | 0.5  |      |
| Delay (s)              |      | 2.1   |      |      | 7.8  |      |      | 10.8  |      |      | 14.4 |      |
| Level of Service       |      | A     |      |      | A    |      |      | B     |      |      | B    |      |
| Approach Delay (s)     |      | 2.1   |      |      | 7.8  |      |      | 10.8  |      |      | 14.4 |      |
| Approach LOS           |      | A     |      |      | A    |      |      | B     |      |      | B    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 5.5   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.38  |                      |     |
| Actuated Cycle Length (s)         | 60.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 42.6% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3428: J Street & 29th St off ramp

4/4/2005



| Movement                          | EBT  | EBR   | WBL   | WBT   | SBL   | SBT   | SWL2  | SWL   |
|-----------------------------------|------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations               | ↑↑   | ↑     |       | ↔     |       | ↑↑↑   |       | ↔     |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  |
| Total Lost time (s)               | 4.0  | 4.0   |       | 4.0   |       | 4.0   |       | 4.0   |
| Lane Util. Factor                 | 0.95 | 1.00  |       | 1.00  |       | 0.91  |       | 0.97  |
| Fr <sub>t</sub>                   | 1.00 | 0.85  |       | 1.00  |       | 1.00  |       | 1.00  |
| Fl <sub>t</sub> Protected         | 1.00 | 1.00  |       | 0.95  |       | 0.99  |       | 0.95  |
| Satd. Flow (prot)                 | 3539 | 1425  |       | 1770  |       | 4870  |       | 3433  |
| Fl <sub>t</sub> Permitted         | 1.00 | 1.00  |       | 0.95  |       | 0.99  |       | 0.95  |
| Satd. Flow (perm)                 | 3539 | 1425  |       | 1770  |       | 4870  |       | 3433  |
| Volume (vph)                      | 1276 | 643   | 150   | 0     | 82    | 354   | 105   | 391   |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)                   | 1276 | 643   | 150   | 0     | 82    | 354   | 105   | 391   |
| RTOR Reduction (vph)              | 0    | 36    | 0     | 0     | 0     | 0     | 0     | 0     |
| Lane Group Flow (vph)             | 1276 | 607   | 0     | 150   | 0     | 436   | 0     | 496   |
| Parking (#/hr)                    |      | 0     |       |       |       | 0     |       |       |
| Turn Type                         |      | Perm  | Split |       | Split |       | Split |       |
| Protected Phases                  | 4    |       | 8     | 8     | 6     | 6     | 2     | 2     |
| Permitted Phases                  |      | 4     |       |       |       |       |       |       |
| Actuated Green, G (s)             | 35.0 | 35.0  |       | 8.0   |       | 9.0   |       | 16.0  |
| Effective Green, g (s)            | 34.0 | 34.0  |       | 7.0   |       | 8.0   |       | 15.0  |
| Actuated g/C Ratio                | 0.42 | 0.42  |       | 0.09  |       | 0.10  |       | 0.19  |
| Clearance Time (s)                | 3.0  | 3.0   |       | 3.0   |       | 3.0   |       | 3.0   |
| Lane Grp Cap (vph)                | 1504 | 606   |       | 155   |       | 487   |       | 644   |
| v/s Ratio Prot                    | 0.36 |       |       | c0.08 |       | c0.09 |       | c0.14 |
| v/s Ratio Perm                    |      | c0.43 |       |       |       |       |       |       |
| v/c Ratio                         | 0.85 | 1.00  |       | 0.97  |       | 0.90  |       | 0.77  |
| Uniform Delay, d <sub>1</sub>     | 20.7 | 23.0  |       | 36.4  |       | 35.6  |       | 30.9  |
| Progression Factor                | 0.48 | 0.23  |       | 0.94  |       | 1.00  |       | 1.00  |
| Incremental Delay, d <sub>2</sub> | 4.2  | 29.7  |       | 47.9  |       | 21.7  |       | 8.6   |
| Delay (s)                         | 14.2 | 35.0  |       | 82.3  |       | 57.2  |       | 39.5  |
| Level of Service                  | B    | D     |       | F     |       | E     |       | D     |
| Approach Delay (s)                | 21.1 |       |       | 82.3  |       | 57.2  |       | 39.5  |
| Approach LOS                      | C    |       |       | F     |       | E     |       | D     |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 32.5  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.93  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 16.0 |
| Intersection Capacity Utilization | 79.6% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3429: J Street & Alhambra

4/4/2005



| Movement               | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|-------|-------|------|-------|-------|------|------|------|------|------|-------|------|
| Lane Configurations    |       | ↔     |      | ↙     | ↖     | ↗    |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |       | 4.0   |      | 4.0   | 4.0   | 4.0  |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor      |       | 0.95  |      | 0.95  | 0.95  | 1.00 |      | 0.95 |      |      | 0.95  |      |
| Fr <sub>t</sub>        |       | 0.97  |      | 1.00  | 1.00  | 0.85 |      | 0.93 |      |      | 1.00  |      |
| Flt Protected          |       | 0.99  |      | 0.95  | 1.00  | 1.00 |      | 1.00 |      |      | 0.99  |      |
| Satd. Flow (prot)      |       | 3239  |      | 1681  | 1770  | 1425 |      | 3119 |      |      | 3342  |      |
| Flt Permitted          |       | 0.99  |      | 0.95  | 1.00  | 1.00 |      | 1.00 |      |      | 0.70  |      |
| Satd. Flow (perm)      |       | 3239  |      | 1681  | 1770  | 1425 |      | 3119 |      |      | 2360  |      |
| Volume (vph)           | 158   | 804   | 243  | 408   | 445   | 80   | 0    | 295  | 275  | 52   | 378   | 0    |
| Peak-hour factor, PHF  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 158   | 804   | 243  | 408   | 445   | 80   | 0    | 295  | 275  | 52   | 378   | 0    |
| RTOR Reduction (vph)   | 0     | 28    | 0    | 0     | 0     | 59   | 0    | 209  | 0    | 0    | 0     | 0    |
| Lane Group Flow (vph)  | 0     | 1177  | 0    | 408   | 445   | 21   | 0    | 361  | 0    | 0    | 430   | 0    |
| Parking (#/hr)         |       | 0     | 0    |       |       | 0    |      | 0    | 0    |      | 0     |      |
| Turn Type              | Split |       |      | Split |       | Perm | Perm |      |      | Perm |       |      |
| Protected Phases       | 4     | 4     |      | 8     | 8     |      |      | 2    |      |      | 6     |      |
| Permitted Phases       |       |       |      |       |       | 8    | 2    |      |      | 6    |       |      |
| Actuated Green, G (s)  |       | 31.0  |      | 22.0  | 22.0  | 22.0 |      | 18.0 |      |      | 18.0  |      |
| Effective Green, g (s) |       | 30.0  |      | 21.0  | 21.0  | 21.0 |      | 17.0 |      |      | 17.0  |      |
| Actuated g/C Ratio     |       | 0.38  |      | 0.26  | 0.26  | 0.26 |      | 0.21 |      |      | 0.21  |      |
| Clearance Time (s)     |       | 3.0   |      | 3.0   | 3.0   | 3.0  |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)     |       | 1215  |      | 441   | 465   | 374  |      | 663  |      |      | 502   |      |
| v/s Ratio Prot         |       | c0.36 |      | 0.24  | c0.25 |      |      | 0.12 |      |      |       |      |
| v/s Ratio Perm         |       |       |      |       |       | 0.01 |      |      |      |      | c0.18 |      |
| v/c Ratio              |       | 0.97  |      | 0.93  | 0.96  | 0.06 |      | 0.54 |      |      | 0.86  |      |
| Uniform Delay, d1      |       | 24.5  |      | 28.7  | 29.1  | 22.1 |      | 28.0 |      |      | 30.3  |      |
| Progression Factor     |       | 0.50  |      | 1.00  | 1.00  | 1.00 |      | 0.70 |      |      | 1.00  |      |
| Incremental Delay, d2  |       | 18.4  |      | 27.7  | 32.3  | 0.3  |      | 2.9  |      |      | 17.0  |      |
| Delay (s)              |       | 30.7  |      | 56.4  | 61.3  | 22.4 |      | 22.6 |      |      | 47.3  |      |
| Level of Service       |       | C     |      | E     | E     | C    |      | C    |      |      | D     |      |
| Approach Delay (s)     |       | 30.7  |      |       | 55.8  |      |      | 22.6 |      |      | 47.3  |      |
| Approach LOS           |       | C     |      |       | E     |      |      | C    |      |      | D     |      |

| Intersection Summary              |        |                      |      |
|-----------------------------------|--------|----------------------|------|
| HCM Average Control Delay         | 39.0   | HCM Level of Service | D    |
| HCM Volume to Capacity ratio      | 0.94   |                      |      |
| Actuated Cycle Length (s)         | 80.0   | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 100.3% | ICU Level of Service | G    |
| Analysis Period (min)             | 15     |                      |      |
| c Critical Lane Group             |        |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3435: N Street & 29th Street

4/4/2005



| Movement               | EBT   | EBR  | EBR2 | WBL2  | WBL   | WBT   | SBL2 | SBL   | SBT  | SBR  |
|------------------------|-------|------|------|-------|-------|-------|------|-------|------|------|
| Lane Configurations    | ↔     | ↔    |      |       | ↔     | ↔     |      | ↔↔    | ↔↔   |      |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900  | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    | 4.0   | 4.0  |      |       | 4.0   | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor      | 0.95  | 0.95 |      |       | 0.95  | 0.95  |      | 0.97  | 0.95 |      |
| Frt                    | 1.00  | 0.85 |      |       | 1.00  | 1.00  |      | 1.00  | 0.99 |      |
| Flt Protected          | 1.00  | 1.00 |      |       | 0.95  | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)      | 1593  | 1354 |      |       | 1681  | 1770  |      | 3433  | 3342 |      |
| Flt Permitted          | 1.00  | 1.00 |      |       | 0.95  | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)      | 1593  | 1354 |      |       | 1681  | 1770  |      | 3433  | 3342 |      |
| Volume (vph)           | 306   | 106  | 151  | 135   | 176   | 613   | 33   | 1176  | 935  | 40   |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 306   | 106  | 151  | 135   | 176   | 613   | 33   | 1176  | 935  | 40   |
| RTOR Reduction (vph)   | 0     | 64   | 0    | 0     | 0     | 0     | 0    | 0     | 4    | 0    |
| Lane Group Flow (vph)  | 306   | 193  | 0    | 0     | 311   | 613   | 0    | 1209  | 971  | 0    |
| Parking (#/hr)         | 0     | 0    | 0    |       |       |       |      |       | 0    |      |
| Turn Type              |       | Prot |      | Split | Split |       | Perm | Perm  |      |      |
| Protected Phases       | 4     | 4    |      | 8     | 8     | 8     |      |       |      | 6    |
| Permitted Phases       |       |      |      |       |       |       | 6    | 6     |      |      |
| Actuated Green, G (s)  | 17.0  | 17.0 |      |       | 26.0  | 26.0  |      | 28.0  | 28.0 |      |
| Effective Green, g (s) | 16.0  | 16.0 |      |       | 25.0  | 25.0  |      | 27.0  | 27.0 |      |
| Actuated g/C Ratio     | 0.20  | 0.20 |      |       | 0.31  | 0.31  |      | 0.34  | 0.34 |      |
| Clearance Time (s)     | 3.0   | 3.0  |      |       | 3.0   | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     | 319   | 271  |      |       | 525   | 553   |      | 1159  | 1128 |      |
| v/s Ratio Prot         | c0.19 | 0.14 |      |       | 0.18  | c0.35 |      |       | 0.29 |      |
| v/s Ratio Perm         |       |      |      |       |       |       |      | c0.35 |      |      |
| v/c Ratio              | 0.96  | 0.71 |      |       | 0.59  | 1.11  |      | 1.04  | 0.86 |      |
| Uniform Delay, d1      | 31.7  | 29.9 |      |       | 23.2  | 27.5  |      | 26.5  | 24.7 |      |
| Progression Factor     | 0.85  | 0.79 |      |       | 0.85  | 0.86  |      | 0.59  | 0.56 |      |
| Incremental Delay, d2  | 25.7  | 7.2  |      |       | 3.7   | 67.2  |      | 32.2  | 5.1  |      |
| Delay (s)              | 52.7  | 30.7 |      |       | 23.4  | 90.9  |      | 47.8  | 19.1 |      |
| Level of Service       | D     | C    |      |       | C     | F     |      | D     | B    |      |
| Approach Delay (s)     | 42.6  |      |      |       |       | 68.2  |      |       | 35.0 |      |
| Approach LOS           | D     |      |      |       |       | E     |      |       | C    |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 44.5  | HCM Level of Service | D    |
| HCM Volume to Capacity ratio      | 1.05  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 96.1% | ICU Level of Service | F    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
3436: Capitol & Alhambra

4/4/2005



| Movement               | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL  | NBT  | NBR  | SBL   | SBT  | SBR  |
|------------------------|-------|-------|------|-------|-------|------|------|------|------|-------|------|------|
| Lane Configurations    |       | ↔     |      |       | ↔     |      | ↖    | ↗    | ↖    | ↗     | ↖    | ↗    |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    |       | 4.0   |      |       | 4.0   |      | 4.0  | 4.0  | 4.0  | 4.0   | 4.0  | 4.0  |
| Lane Util. Factor      |       | 0.95  |      |       | 0.95  |      | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Frts                   |       | 1.00  |      |       | 0.98  |      | 1.00 | 1.00 | 0.85 | 1.00  | 1.00 | 0.85 |
| Flt Protected          |       | 0.99  |      |       | 1.00  |      | 0.95 | 1.00 | 1.00 | 0.95  | 1.00 | 1.00 |
| Satd. Flow (prot)      |       | 3326  |      |       | 3279  |      | 1770 | 1676 | 1425 | 1770  | 1676 | 1425 |
| Flt Permitted          |       | 0.99  |      |       | 1.00  |      | 0.29 | 1.00 | 1.00 | 0.27  | 1.00 | 1.00 |
| Satd. Flow (perm)      |       | 3326  |      |       | 3279  |      | 543  | 1676 | 1425 | 498   | 1676 | 1425 |
| Volume (vph)           | 104   | 457   | 7    | 49    | 673   | 123  | 55   | 545  | 81   | 209   | 518  | 56   |
| Peak-hour factor, PHF  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 104   | 457   | 7    | 49    | 673   | 123  | 55   | 545  | 81   | 209   | 518  | 56   |
| RTOR Reduction (vph)   | 0     | 1     | 0    | 0     | 18    | 0    | 0    | 0    | 34   | 0     | 0    | 24   |
| Lane Group Flow (vph)  | 0     | 567   | 0    | 0     | 827   | 0    | 55   | 545  | 47   | 209   | 518  | 32   |
| Parking (#/hr)         |       | 0     | 0    |       | 0     | 0    |      | 0    | 0    |       | 0    | 0    |
| Turn Type              | Split |       |      | Split |       |      | Perm |      | Perm | Perm  |      | Perm |
| Protected Phases       | 4     | 4     |      | 8     | 8     |      |      | 2    |      | 6     |      | 6    |
| Permitted Phases       |       |       |      |       |       |      | 2    |      | 2    |       |      | 6    |
| Actuated Green, G (s)  |       | 14.0  |      |       | 20.0  |      | 37.0 | 37.0 | 37.0 | 37.0  | 37.0 | 37.0 |
| Effective Green, g (s) |       | 13.0  |      |       | 19.0  |      | 36.0 | 36.0 | 36.0 | 36.0  | 36.0 | 36.0 |
| Actuated g/C Ratio     |       | 0.16  |      |       | 0.24  |      | 0.45 | 0.45 | 0.45 | 0.45  | 0.45 | 0.45 |
| Clearance Time (s)     |       | 3.0   |      |       | 3.0   |      | 3.0  | 3.0  | 3.0  | 3.0   | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |       | 540   |      |       | 779   |      | 244  | 754  | 641  | 224   | 754  | 641  |
| v/s Ratio Prot         |       | c0.17 |      |       | c0.25 |      |      | 0.33 |      |       | 0.31 |      |
| v/s Ratio Perm         |       |       |      |       |       |      | 0.10 |      | 0.03 | c0.42 |      | 0.02 |
| v/c Ratio              |       | 1.05  |      |       | 1.06  |      | 0.23 | 0.72 | 0.07 | 0.93  | 0.69 | 0.05 |
| Uniform Delay, d1      |       | 33.5  |      |       | 30.5  |      | 13.5 | 17.9 | 12.5 | 20.9  | 17.5 | 12.4 |
| Progression Factor     |       | 0.55  |      |       | 1.00  |      | 0.53 | 0.50 | 0.33 | 0.47  | 0.43 | 0.24 |
| Incremental Delay, d2  |       | 52.3  |      |       | 50.1  |      | 1.5  | 4.3  | 0.2  | 35.4  | 3.5  | 0.1  |
| Delay (s)              |       | 70.9  |      |       | 80.6  |      | 8.7  | 13.2 | 4.3  | 45.2  | 11.0 | 3.1  |
| Level of Service       |       | E     |      |       | F     |      | A    | B    | A    | D     | B    | A    |
| Approach Delay (s)     |       | 70.9  |      |       | 80.6  |      |      | 11.8 |      |       | 19.6 |      |
| Approach LOS           |       | E     |      |       | F     |      |      | B    |      |       | B    |      |

**Intersection Summary**

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 45.8  | HCM Level of Service | D    |
| HCM Volume to Capacity ratio      | 0.99  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 93.4% | ICU Level of Service | F    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3437: P Street & P St off ramp

4/4/2005



| Movement               | EBT  | EBR  | WBL   | WBT  | SBL   | SBT   | SBR  | SWL2  | SWL  | SWR  |
|------------------------|------|------|-------|------|-------|-------|------|-------|------|------|
| Lane Configurations    | ↑    | ↗    | ↖     | ↑    |       | ↕     |      | ↖     | ↗    | ↘    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    | 4.0  | 4.0  | 4.0   | 4.0  |       | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor      | 1.00 | 1.00 | 1.00  | 1.00 |       | 0.91  |      | 0.91  | 0.91 |      |
| Frt                    | 1.00 | 0.85 | 1.00  | 1.00 |       | 0.99  |      | 1.00  | 0.98 |      |
| Flt Protected          | 1.00 | 1.00 | 0.95  | 1.00 |       | 0.99  |      | 0.95  | 0.96 |      |
| Satd. Flow (prot)      | 1676 | 1425 | 1593  | 1676 |       | 4833  |      | 1610  | 3174 |      |
| Flt Permitted          | 1.00 | 1.00 | 0.39  | 1.00 |       | 0.99  |      | 0.95  | 0.96 |      |
| Satd. Flow (perm)      | 1676 | 1425 | 658   | 1676 |       | 4833  |      | 1610  | 3174 |      |
| Volume (vph)           | 384  | 174  | 210   | 495  | 269   | 857   | 44   | 260   | 236  | 61   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 384  | 174  | 210   | 495  | 269   | 857   | 44   | 260   | 236  | 61   |
| RTOR Reduction (vph)   | 0    | 42   | 0     | 0    | 0     | 5     | 0    | 0     | 0    | 0    |
| Lane Group Flow (vph)  | 384  | 132  | 210   | 495  | 0     | 1165  | 0    | 188   | 369  | 0    |
| Parking (#/hr)         | 0    | 0    | 0     | 0    | 0     | 0     | 0    |       |      |      |
| Turn Type              |      | Perm | Perm  |      | Split |       |      | Split |      |      |
| Protected Phases       | 4    |      |       | 8    | 6     | 6     |      | 2     | 2    |      |
| Permitted Phases       |      | 4    | 8     |      |       |       |      |       |      |      |
| Actuated Green, G (s)  | 34.0 | 34.0 | 34.0  | 34.0 |       | 23.0  |      | 14.0  | 14.0 |      |
| Effective Green, g (s) | 33.0 | 33.0 | 33.0  | 33.0 |       | 22.0  |      | 13.0  | 13.0 |      |
| Actuated g/C Ratio     | 0.41 | 0.41 | 0.41  | 0.41 |       | 0.28  |      | 0.16  | 0.16 |      |
| Clearance Time (s)     | 3.0  | 3.0  | 3.0   | 3.0  |       | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     | 691  | 588  | 271   | 691  |       | 1329  |      | 262   | 516  |      |
| v/s Ratio Prot         | 0.23 |      |       | 0.30 |       | c0.24 |      | c0.12 | 0.12 |      |
| v/s Ratio Perm         |      | 0.09 | c0.32 |      |       |       |      |       |      |      |
| v/c Ratio              | 0.56 | 0.22 | 0.77  | 0.72 |       | 0.88  |      | 0.72  | 0.72 |      |
| Uniform Delay, d1      | 17.9 | 15.2 | 20.3  | 19.6 |       | 27.7  |      | 31.8  | 31.7 |      |
| Progression Factor     | 1.00 | 1.00 | 0.52  | 0.51 |       | 0.46  |      | 1.00  | 1.00 |      |
| Incremental Delay, d2  | 3.2  | 0.9  | 17.9  | 5.8  |       | 4.9   |      | 15.6  | 8.2  |      |
| Delay (s)              | 21.1 | 16.1 | 28.4  | 15.7 |       | 17.5  |      | 47.3  | 40.0 |      |
| Level of Service       | C    | B    | C     | B    |       | B     |      | D     | D    |      |
| Approach Delay (s)     | 19.6 |      |       | 19.5 |       | 17.5  |      |       | 42.5 |      |
| Approach LOS           | B    |      |       | B    |       | B     |      |       | D    |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 23.0  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.80  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 78.9% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |



HCM Signalized Intersection Capacity Analysis  
3438: P Street & Alhambra

4/4/2005



| Movement                          | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR   |
|-----------------------------------|------|------|------|------|-------|------|------|-------|------|------|------|-------|
| Lane Configurations               |      | ↔    |      |      | ↔     | ↗    | ↖    | ↑     |      | ↗    | ↖    |       |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900  |
| Total Lost time (s)               |      | 4.0  |      |      | 4.0   | 4.0  | 4.0  | 4.0   |      | 4.0  | 4.0  |       |
| Lane Util. Factor                 |      | 0.95 |      |      | 0.95  | 1.00 | 1.00 | 1.00  |      | 1.00 | 1.00 |       |
| Fr <sub>t</sub>                   |      | 1.00 |      |      | 1.00  | 0.85 | 1.00 | 0.99  |      | 1.00 | 0.98 |       |
| Fl <sub>t</sub> Protected         |      | 1.00 |      |      | 1.00  | 1.00 | 0.95 | 1.00  |      | 0.95 | 1.00 |       |
| Satd. Flow (prot)                 |      | 3539 |      |      | 3526  | 1583 | 1770 | 1850  |      | 1770 | 1819 |       |
| Fl <sub>t</sub> Permitted         |      | 1.00 |      |      | 0.79  | 1.00 | 0.95 | 1.00  |      | 0.95 | 1.00 |       |
| Satd. Flow (perm)                 |      | 3539 |      |      | 2792  | 1583 | 1770 | 1850  |      | 1770 | 1819 |       |
| Volume (vph)                      | 0    | 789  | 0    | 73   | 939   | 191  | 106  | 397   | 19   | 54   | 426  | 79    |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  |
| Adj. Flow (vph)                   | 0    | 789  | 0    | 73   | 939   | 191  | 106  | 397   | 19   | 54   | 426  | 79    |
| RTOR Reduction (vph)              | 0    | 0    | 0    | 0    | 0     | 110  | 0    | 2     | 0    | 0    | 9    | 0     |
| Lane Group Flow (vph)             | 0    | 789  | 0    | 0    | 1012  | 81   | 106  | 414   | 0    | 54   | 496  | 0     |
| Turn Type                         | Perm |      | Perm |      | Perm  | Prot |      |       | Prot |      |      |       |
| Protected Phases                  | 4    |      | 8    |      | 8     | 5    | 2    |       | 1    |      | 6    |       |
| Permitted Phases                  | 4    |      | 8    |      | 8     |      |      |       |      |      |      |       |
| Actuated Green, G (s)             | 35.0 |      |      |      | 35.0  | 35.0 | 8.0  | 31.0  |      | 5.0  |      | 28.0  |
| Effective Green, g (s)            | 34.0 |      |      |      | 34.0  | 34.0 | 7.0  | 30.0  |      | 4.0  |      | 27.0  |
| Actuated g/C Ratio                | 0.42 |      |      |      | 0.42  | 0.42 | 0.09 | 0.38  |      | 0.05 |      | 0.34  |
| Clearance Time (s)                | 3.0  |      |      |      | 3.0   | 3.0  | 3.0  | 3.0   |      | 3.0  |      | 3.0   |
| Lane Grp Cap (vph)                | 1504 |      |      |      | 1187  | 673  | 155  | 694   |      | 89   |      | 614   |
| v/s Ratio Prot                    | 0.22 |      |      |      |       |      | 0.06 | c0.22 |      | 0.03 |      | c0.27 |
| v/s Ratio Perm                    |      |      |      |      | c0.36 | 0.05 |      |       |      |      |      |       |
| v/c Ratio                         | 0.52 |      |      |      | 0.85  | 0.12 | 0.68 | 0.60  |      | 0.61 |      | 0.81  |
| Uniform Delay, d <sub>1</sub>     | 17.0 |      |      |      | 20.7  | 13.9 | 35.4 | 20.1  |      | 37.2 |      | 24.1  |
| Progression Factor                | 0.70 |      |      |      | 1.00  | 1.00 | 1.00 | 1.00  |      | 0.77 |      | 0.76  |
| Incremental Delay, d <sub>2</sub> | 1.0  |      |      |      | 7.8   | 0.4  | 21.8 | 3.8   |      | 19.0 |      | 7.6   |
| Delay (s)                         | 12.9 |      |      |      | 28.6  | 14.3 | 57.2 | 23.9  |      | 47.6 |      | 26.0  |
| Level of Service                  | B    |      |      |      | C     | B    | E    | C     |      | D    |      | C     |
| Approach Delay (s)                | 12.9 |      |      |      | 26.3  |      | 30.7 |       |      |      | 28.1 |       |
| Approach LOS                      | B    |      |      |      | C     |      | C    |       |      |      | C    |       |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 23.9  | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 0.78  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 96.3% | ICU Level of Service | F   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

3444: Q Street & 29th Street

4/4/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|-------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↕     |      | ↕    | ↑    |      |      |      |      |      | ↕↕↕  |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      |      |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00  |      |      |      |      |      |      |      |      | 0.91 |      |
| Frt                    |      | 0.98  |      |      |      |      |      |      |      |      | 0.98 |      |
| Flt Protected          |      | 1.00  |      |      |      |      |      |      |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 1816  |      |      |      |      |      |      |      |      | 4960 |      |
| Flt Permitted          |      | 1.00  |      |      |      |      |      |      |      |      | 1.00 |      |
| Satd. Flow (perm)      |      | 1816  |      |      |      |      |      |      |      |      | 4960 |      |
| Volume (vph)           | 0    | 287   | 65   | 0    | 0    | 0    | 0    | 0    | 0    | 26   | 1297 | 250  |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 287   | 65   | 0    | 0    | 0    | 0    | 0    | 0    | 26   | 1297 | 250  |
| RTOR Reduction (vph)   | 0    | 10    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 34   | 0    |
| Lane Group Flow (vph)  | 0    | 342   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1539 | 0    |
| Turn Type              |      |       |      | Perm |      |      |      |      |      |      | Perm |      |
| Protected Phases       |      | 4     |      |      | 8    |      |      |      |      |      |      | 6    |
| Permitted Phases       |      |       |      | 8    |      |      |      |      |      | 6    |      |      |
| Actuated Green, G (s)  |      | 34.0  |      |      |      |      |      |      |      |      | 40.0 |      |
| Effective Green, g (s) |      | 33.0  |      |      |      |      |      |      |      |      | 39.0 |      |
| Actuated g/C Ratio     |      | 0.41  |      |      |      |      |      |      |      |      | 0.49 |      |
| Clearance Time (s)     |      | 3.0   |      |      |      |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 749   |      |      |      |      |      |      |      |      | 2418 |      |
| v/s Ratio Prot         |      | c0.19 |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |       |      |      |      |      |      |      |      |      | 0.31 |      |
| v/c Ratio              |      | 0.46  |      |      |      |      |      |      |      |      | 0.64 |      |
| Uniform Delay, d1      |      | 17.0  |      |      |      |      |      |      |      |      | 15.2 |      |
| Progression Factor     |      | 1.00  |      |      |      |      |      |      |      |      | 0.47 |      |
| Incremental Delay, d2  |      | 2.0   |      |      |      |      |      |      |      |      | 0.9  |      |
| Delay (s)              |      | 19.0  |      |      |      |      |      |      |      |      | 8.1  |      |
| Level of Service       |      | B     |      |      |      |      |      |      |      |      | A    |      |
| Approach Delay (s)     |      | 19.0  |      |      | 0.0  |      |      | 0.0  |      |      | 8.1  |      |
| Approach LOS           |      | B     |      |      | A    |      |      | A    |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.1  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.55  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 56.9% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 3467: N Street & Alhambra

4/4/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|-------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations    |      | ↕     |      |      | ↕    |      |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      | 4.0  |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor      |      | 1.00  |      |      | 1.00 |      |      | 1.00 |      |      | 1.00  |      |
| Frts                   |      | 1.00  |      |      | 0.99 |      |      | 0.99 |      |      | 0.98  |      |
| Flt Protected          |      | 0.98  |      |      | 0.99 |      |      | 1.00 |      |      | 1.00  |      |
| Satd. Flow (prot)      |      | 1646  |      |      | 1644 |      |      | 1654 |      |      | 1638  |      |
| Flt Permitted          |      | 0.75  |      |      | 0.90 |      |      | 0.98 |      |      | 0.99  |      |
| Satd. Flow (perm)      |      | 1263  |      |      | 1488 |      |      | 1621 |      |      | 1626  |      |
| Volume (vph)           | 122  | 234   | 4    | 58   | 245  | 26   | 18   | 516  | 53   | 9    | 501   | 102  |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 122  | 234   | 4    | 58   | 245  | 26   | 18   | 516  | 53   | 9    | 501   | 102  |
| RTOR Reduction (vph)   | 0    | 1     | 0    | 0    | 4    | 0    | 0    | 5    | 0    | 0    | 9     | 0    |
| Lane Group Flow (vph)  | 0    | 359   |      | 0    | 325  |      | 0    | 583  |      | 0    | 603   |      |
| Parking (#/hr)         | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Turn Type              | Perm |       |      | Perm |      |      | Perm |      |      | Perm |       |      |
| Protected Phases       |      | 4     |      |      | 8    |      |      | 2    |      |      | 6     |      |
| Permitted Phases       | 4    |       |      | 8    |      |      | 2    |      |      | 6    |       |      |
| Actuated Green, G (s)  |      | 33.0  |      |      | 33.0 |      |      | 41.0 |      |      | 41.0  |      |
| Effective Green, g (s) |      | 32.0  |      |      | 32.0 |      |      | 40.0 |      |      | 40.0  |      |
| Actuated g/C Ratio     |      | 0.40  |      |      | 0.40 |      |      | 0.50 |      |      | 0.50  |      |
| Clearance Time (s)     |      | 3.0   |      |      | 3.0  |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)     |      | 505   |      |      | 595  |      |      | 811  |      |      | 813   |      |
| v/s Ratio Prot         |      |       |      |      |      |      |      |      |      |      |       |      |
| v/s Ratio Perm         |      | c0.28 |      |      | 0.22 |      |      | 0.36 |      |      | c0.37 |      |
| v/c Ratio              |      | 0.71  |      |      | 0.55 |      |      | 0.72 |      |      | 0.74  |      |
| Uniform Delay, d1      |      | 20.1  |      |      | 18.4 |      |      | 15.6 |      |      | 15.9  |      |
| Progression Factor     |      | 0.45  |      |      | 1.00 |      |      | 0.66 |      |      | 0.57  |      |
| Incremental Delay, d2  |      | 7.3   |      |      | 3.6  |      |      | 4.8  |      |      | 4.4   |      |
| Delay (s)              |      | 16.4  |      |      | 22.0 |      |      | 15.1 |      |      | 13.4  |      |
| Level of Service       |      | B     |      |      | C    |      |      | B    |      |      | B     |      |
| Approach Delay (s)     |      | 16.4  |      |      | 22.0 |      |      | 15.1 |      |      | 13.4  |      |
| Approach LOS           |      | B     |      |      | C    |      |      | B    |      |      | B     |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 16.0  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.73  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 81.9% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
5802: K Street & 29th Street

4/4/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑    | ↗    | ↖    | ↑     |      |      |      |      |      | ↕    | ↗    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  | 4.0  | 4.0   |      |      |      |      |      | 4.0  | 4.0  |
| Lane Util. Factor      |      | 1.00 | 1.00 | 1.00 | 1.00  |      |      |      |      |      | 0.95 | 1.00 |
| Frt                    |      | 1.00 | 0.85 | 1.00 | 1.00  |      |      |      |      |      | 1.00 | 0.85 |
| Flt Protected          |      | 1.00 | 1.00 | 0.95 | 1.00  |      |      |      |      |      | 0.99 | 1.00 |
| Satd. Flow (prot)      |      | 1863 | 1583 | 1770 | 1863  |      |      |      |      |      | 3518 | 1583 |
| Flt Permitted          |      | 1.00 | 1.00 | 0.43 | 1.00  |      |      |      |      |      | 0.99 | 1.00 |
| Satd. Flow (perm)      |      | 1863 | 1583 | 800  | 1863  |      |      |      |      |      | 3518 | 1583 |
| Volume (vph)           | 0    | 349  | 220  | 202  | 481   | 0    | 0    | 0    | 0    | 158  | 1130 | 305  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 349  | 220  | 202  | 481   | 0    | 0    | 0    | 0    | 158  | 1130 | 305  |
| RTOR Reduction (vph)   | 0    | 0    | 29   | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 122  |
| Lane Group Flow (vph)  | 0    | 349  | 191  | 202  | 481   | 0    | 0    | 0    | 0    | 0    | 1288 | 183  |
| Turn Type              |      |      | Perm | Perm |       |      |      |      |      |      | Perm | Perm |
| Protected Phases       |      | 4    |      |      | 8     |      |      |      |      |      | 6    |      |
| Permitted Phases       |      |      | 4    | 8    |       |      |      |      |      | 6    |      | 6    |
| Actuated Green, G (s)  |      | 34.0 | 34.0 | 34.0 | 34.0  |      |      |      |      |      | 40.0 | 40.0 |
| Effective Green, g (s) |      | 33.0 | 33.0 | 33.0 | 33.0  |      |      |      |      |      | 39.0 | 39.0 |
| Actuated g/C Ratio     |      | 0.41 | 0.41 | 0.41 | 0.41  |      |      |      |      |      | 0.49 | 0.49 |
| Clearance Time (s)     |      | 3.0  | 3.0  | 3.0  | 3.0   |      |      |      |      |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |      | 768  | 653  | 330  | 768   |      |      |      |      |      | 1715 | 772  |
| v/s Ratio Prot         |      | 0.19 |      |      | c0.26 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      | 0.12 | 0.25 |       |      |      |      |      |      | 0.37 | 0.12 |
| v/c Ratio              |      | 0.45 | 0.29 | 0.61 | 0.63  |      |      |      |      |      | 0.75 | 0.24 |
| Uniform Delay, d1      |      | 17.0 | 15.7 | 18.5 | 18.6  |      |      |      |      |      | 16.6 | 11.9 |
| Progression Factor     |      | 0.79 | 0.69 | 0.71 | 0.71  |      |      |      |      |      | 0.93 | 0.08 |
| Incremental Delay, d2  |      | 1.8  | 1.1  | 7.1  | 3.3   |      |      |      |      |      | 1.4  | 0.5  |
| Delay (s)              |      | 15.3 | 12.0 | 20.3 | 16.5  |      |      |      |      |      | 16.8 | 1.5  |
| Level of Service       |      | B    | B    | C    | B     |      |      |      |      |      | B    | A    |
| Approach Delay (s)     |      | 14.0 |      |      | 17.6  |      |      | 0.0  |      |      | 13.9 |      |
| Approach LOS           |      | B    |      |      | B     |      |      | A    |      |      | B    |      |

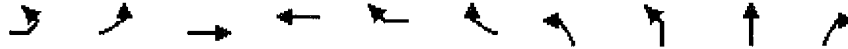
Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 14.8  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.69  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 75.4% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
5848: J Street & 30th Street

4/4/2005



| Movement               | EBL2 | EBL   | EBT  | WBT   | WBR  | WBR2 | NBL2 | NBL   | NBT  | NBR  |
|------------------------|------|-------|------|-------|------|------|------|-------|------|------|
| Lane Configurations    |      | ↔     | ↕    | ↔     |      |      |      | ↔     | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0   | 4.0  | 4.0   |      |      |      | 4.0   | 4.0  |      |
| Lane Util. Factor      |      | 1.00  | 0.95 | 1.00  |      |      |      | 0.91  | 0.91 |      |
| Frt                    |      | 1.00  | 1.00 | 0.90  |      |      |      | 1.00  | 0.97 |      |
| Flt Protected          |      | 0.95  | 1.00 | 1.00  |      |      |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)      |      | 1770  | 3362 | 1505  |      |      |      | 1610  | 3267 |      |
| Flt Permitted          |      | 0.95  | 1.00 | 1.00  |      |      |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)      |      | 1770  | 3362 | 1505  |      |      |      | 1610  | 3267 |      |
| Volume (vph)           | 179  | 188   | 982  | 112   | 345  | 1    | 37   | 236   | 352  | 108  |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 179  | 188   | 982  | 112   | 345  | 1    | 37   | 236   | 352  | 108  |
| RTOR Reduction (vph)   | 0    | 0     | 0    | 0     | 0    | 0    | 0    | 0     | 29   | 0    |
| Lane Group Flow (vph)  | 0    | 367   | 982  | 458   | 0    | 0    | 0    | 235   | 469  | 0    |
| Parking (#/hr)         |      |       | 0    | 0     | 0    | 0    |      |       |      | 0    |
| Turn Type              | Prot | Prot  |      |       |      |      | Perm | Perm  |      |      |
| Protected Phases       | 7    | 7     | 4    | 8     |      |      |      |       | 2    |      |
| Permitted Phases       |      |       |      |       |      |      | 2    | 2     |      |      |
| Actuated Green, G (s)  |      | 22.0  | 55.0 | 30.0  |      |      |      | 19.0  | 19.0 |      |
| Effective Green, g (s) |      | 21.0  | 54.0 | 29.0  |      |      |      | 18.0  | 18.0 |      |
| Actuated g/C Ratio     |      | 0.26  | 0.68 | 0.36  |      |      |      | 0.22  | 0.22 |      |
| Clearance Time (s)     |      | 3.0   | 3.0  | 3.0   |      |      |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     |      | 465   | 2269 | 546   |      |      |      | 362   | 735  |      |
| v/s Ratio Prot         |      | c0.21 | 0.29 | c0.30 |      |      |      |       |      |      |
| v/s Ratio Perm         |      |       |      |       |      |      |      | c0.15 | 0.14 |      |
| v/c Ratio              |      | 0.79  | 0.43 | 0.84  |      |      |      | 0.65  | 0.64 |      |
| Uniform Delay, d1      |      | 27.4  | 6.0  | 23.4  |      |      |      | 28.1  | 28.0 |      |
| Progression Factor     |      | 0.42  | 0.08 | 0.55  |      |      |      | 0.55  | 0.50 |      |
| Incremental Delay, d2  |      | 6.8   | 0.3  | 5.7   |      |      |      | 7.5   | 3.6  |      |
| Delay (s)              |      | 18.3  | 0.8  | 18.5  |      |      |      | 22.9  | 17.7 |      |
| Level of Service       |      | B     | A    | B     |      |      |      | C     | B    |      |
| Approach Delay (s)     |      |       | 5.5  | 18.5  |      |      |      |       | 19.4 |      |
| Approach LOS           |      |       | A    | B     |      |      |      |       | B    |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 11.9  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.77  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 71.6% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 5849: L Street & 30th Street

4/4/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|-------|------|------|------|------|
| Lane Configurations    |      |      |      |      | ↑↑    | ↑    | ↓    | ↓↑↑   |      |      |      |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0   | 4.0  | 4.0  | 4.0   |      |      |      |      |
| Lane Util. Factor      |      |      |      |      | 0.95  | 1.00 | 0.86 | 0.86  |      |      |      |      |
| Frt                    |      |      |      |      | 1.00  | 0.85 | 1.00 | 1.00  |      |      |      |      |
| Flt Protected          |      |      |      |      | 1.00  | 1.00 | 0.95 | 1.00  |      |      |      |      |
| Satd. Flow (prot)      |      |      |      |      | 3539  | 1425 | 1522 | 4646  |      |      |      |      |
| Flt Permitted          |      |      |      |      | 1.00  | 1.00 | 0.95 | 1.00  |      |      |      |      |
| Satd. Flow (perm)      |      |      |      |      | 3539  | 1425 | 1522 | 4646  |      |      |      |      |
| Volume (vph)           | 0    | 0    | 0    | 0    | 444   | 91   | 175  | 1210  | 0    | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 0    | 444   | 91   | 175  | 1210  | 0    | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 0     | 34   | 81   | 0     | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 444   | 57   | 94   | 1210  | 0    | 0    | 0    | 0    |
| Parking (#/hr)         |      |      |      |      |       | 0    |      | 0     |      |      |      |      |
| Turn Type              |      |      |      |      |       | Perm | Perm |       |      |      |      |      |
| Protected Phases       |      |      |      |      | 8     |      |      | 2     |      |      |      |      |
| Permitted Phases       |      |      |      |      |       | 8    |      | 2     |      |      |      |      |
| Actuated Green, G (s)  |      |      |      |      | 30.0  | 30.0 | 44.0 | 44.0  |      |      |      |      |
| Effective Green, g (s) |      |      |      |      | 29.0  | 29.0 | 43.0 | 43.0  |      |      |      |      |
| Actuated g/C Ratio     |      |      |      |      | 0.36  | 0.36 | 0.54 | 0.54  |      |      |      |      |
| Clearance Time (s)     |      |      |      |      | 3.0   | 3.0  | 3.0  | 3.0   |      |      |      |      |
| Lane Grp Cap (vph)     |      |      |      |      | 1283  | 517  | 818  | 2497  |      |      |      |      |
| v/s Ratio Prot         |      |      |      |      | c0.13 |      |      | c0.26 |      |      |      |      |
| v/s Ratio Perm         |      |      |      |      |       | 0.04 | 0.06 |       |      |      |      |      |
| v/c Ratio              |      |      |      |      | 0.35  | 0.11 | 0.11 | 0.48  |      |      |      |      |
| Uniform Delay, d1      |      |      |      |      | 18.6  | 16.9 | 9.1  | 11.6  |      |      |      |      |
| Progression Factor     |      |      |      |      | 0.71  | 0.49 | 0.24 | 0.75  |      |      |      |      |
| Incremental Delay, d2  |      |      |      |      | 0.6   | 0.4  | 0.3  | 0.7   |      |      |      |      |
| Delay (s)              |      |      |      |      | 13.8  | 8.6  | 2.5  | 9.3   |      |      |      |      |
| Level of Service       |      |      |      |      | B     | A    | A    | A     |      |      |      |      |
| Approach Delay (s)     |      | 0.0  |      |      | 12.9  |      |      | 8.5   |      |      | 0.0  |      |
| Approach LOS           |      | A    |      |      | B     |      |      | A     |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 9.7   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.43  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 75.9% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 5880: N Street & 30th Street

4/4/2005

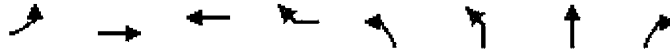


| Movement               | EBL  | EBT  | WBT   | WBR  | NBL  | NBT  | NBR   | NEL2 | NEL    | NER  |
|------------------------|------|------|-------|------|------|------|-------|------|--------|------|
| Lane Configurations    | ↖    | ↑    | ↗     |      |      | ↖↗   |       |      | ↖↗     |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 | 1900   | 1900 |
| Total Lost time (s)    | 4.0  | 4.0  | 4.0   |      |      | 4.0  |       |      | 4.0    |      |
| Lane Util. Factor      | 1.00 | 1.00 | 1.00  |      |      | 0.91 |       |      | 0.97   |      |
| Frt                    | 1.00 | 1.00 | 0.98  |      |      | 0.99 |       |      | 0.98   |      |
| Flt Protected          | 0.95 | 1.00 | 1.00  |      |      | 0.99 |       |      | 0.96   |      |
| Satd. Flow (prot)      | 1770 | 1863 | 1640  |      |      | 4793 |       |      | 3404   |      |
| Flt Permitted          | 0.37 | 1.00 | 1.00  |      |      | 0.99 |       |      | 0.96   |      |
| Satd. Flow (perm)      | 687  | 1863 | 1640  |      |      | 4793 |       |      | 3404   |      |
| Volume (vph)           | 75   | 272  | 288   | 55   | 156  | 361  | 42    | 475  | 169    | 76   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00   | 1.00 |
| Adj. Flow (vph)        | 75   | 272  | 288   | 55   | 156  | 361  | 42    | 475  | 169    | 76   |
| RTOR Reduction (vph)   | 0    | 0    | 9     | 0    | 0    | 12   | 0     | 0    | 0      | 0    |
| Lane Group Flow (vph)  | 75   | 272  | 334   | 0    | 0    | 547  | 0     | 0    | 720    | 0    |
| Parking (#/hr)         |      |      | 0     | 0    |      | 0    | 0     |      |        |      |
| Turn Type              | Perm |      |       | Perm |      |      | Split |      |        |      |
| Protected Phases       |      | 4    | 8     |      |      | 2    |       | 6    | 6      |      |
| Permitted Phases       | 4    |      |       |      | 2    |      |       |      |        |      |
| Actuated Green, G (s)  | 27.0 | 27.0 | 27.0  |      |      | 19.0 |       |      | 25.0   |      |
| Effective Green, g (s) | 26.0 | 26.0 | 26.0  |      |      | 18.0 |       |      | 24.0   |      |
| Actuated g/C Ratio     | 0.32 | 0.32 | 0.32  |      |      | 0.22 |       |      | 0.30   |      |
| Clearance Time (s)     | 3.0  | 3.0  | 3.0   |      |      | 3.0  |       |      | 3.0    |      |
| Lane Grp Cap (vph)     | 223  | 605  | 533   |      |      | 1078 |       |      | 1021   |      |
| v/s Ratio Prot         |      | 0.15 | c0.20 |      |      |      |       |      | c0.21  |      |
| v/s Ratio Perm         | 0.11 |      |       |      |      | 0.11 |       |      |        |      |
| v/c Ratio              | 0.34 | 0.45 | 0.63  |      |      | 0.51 |       |      | 0.89dl |      |
| Uniform Delay, d1      | 20.5 | 21.3 | 22.9  |      |      | 27.1 |       |      | 24.9   |      |
| Progression Factor     | 1.01 | 1.03 | 0.67  |      |      | 0.71 |       |      | 1.00   |      |
| Incremental Delay, d2  | 1.4  | 0.8  | 4.4   |      |      | 1.6  |       |      | 4.1    |      |
| Delay (s)              | 22.1 | 22.9 | 19.8  |      |      | 20.9 |       |      | 29.0   |      |
| Level of Service       | C    | C    | B     |      |      | C    |       |      | C      |      |
| Approach Delay (s)     |      | 22.7 | 19.8  |      |      | 20.9 |       |      | 29.0   |      |
| Approach LOS           |      | C    | B     |      |      | C    |       |      | C      |      |

| Intersection Summary  |       |                      |      |
|---|-------|----------------------|------|
| HCM Average Control Delay                                       | 24.0  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio                                    | 0.62  |                      |      |
| Actuated Cycle Length (s)                                       | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization                               | 73.4% | ICU Level of Service | D    |
| Analysis Period (min)   | 15    |                      |      |
| dl Defacto Left Lane. Recode with 1 though lane as a left lane. |       |                      |      |
| c Critical Lane Group   |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
5882: P Street & 30th Street

4/4/2005



| Movement                          | EBL  | EBT   | WBT  | WBR  | NBL2 | NBL   | NBT  | NBR  |
|-----------------------------------|------|-------|------|------|------|-------|------|------|
| Lane Configurations               | ↵    | ↑     | ↑↵   |      | ↵    | ↵     | ↵↵   |      |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)               | 4.0  | 4.0   | 4.0  |      | 4.0  | 4.0   | 4.0  |      |
| Lane Util. Factor                 | 1.00 | 1.00  | 0.95 |      | 1.00 | 0.91  | 0.91 |      |
| Fr <sub>t</sub>                   | 1.00 | 1.00  | 0.96 |      | 1.00 | 1.00  | 0.98 |      |
| Fl <sub>t</sub> Protected         | 0.95 | 1.00  | 1.00 |      | 0.95 | 0.95  | 0.98 |      |
| Satd. Flow (prot)                 | 1770 | 1863  | 3385 |      | 1593 | 1449  | 3113 |      |
| Fl <sub>t</sub> Permitted         | 0.25 | 1.00  | 1.00 |      | 0.95 | 0.95  | 0.98 |      |
| Satd. Flow (perm)                 | 471  | 1863  | 3385 |      | 1593 | 1449  | 3113 |      |
| Volume (vph)                      | 147  | 767   | 673  | 276  | 110  | 329   | 242  | 52   |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 147  | 767   | 673  | 276  | 110  | 329   | 242  | 52   |
| RTOR Reduction (vph)              | 0    | 0     | 0    | 0    | 0    | 0     | 13   | 0    |
| Lane Group Flow (vph)             | 147  | 767   | 949  | 0    | 110  | 195   | 415  | 0    |
| Parking (#/hr)                    |      |       |      | 0    | 0    | 0     | 0    |      |
| Turn Type                         | Perm |       |      |      | Perm | Perm  |      |      |
| Protected Phases                  |      | 4     | 8    |      |      |       | 2    |      |
| Permitted Phases                  | 4    |       |      |      | 2    | 2     |      |      |
| Actuated Green, G (s)             | 50.0 | 50.0  | 50.0 |      | 24.0 | 24.0  | 24.0 |      |
| Effective Green, g (s)            | 49.0 | 49.0  | 49.0 |      | 23.0 | 23.0  | 23.0 |      |
| Actuated g/C Ratio                | 0.61 | 0.61  | 0.61 |      | 0.29 | 0.29  | 0.29 |      |
| Clearance Time (s)                | 3.0  | 3.0   | 3.0  |      | 3.0  | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)                | 288  | 1141  | 2073 |      | 458  | 417   | 895  |      |
| v/s Ratio Prot                    |      | c0.41 | 0.28 |      |      |       |      |      |
| v/s Ratio Perm                    | 0.31 |       |      |      | 0.07 | c0.13 | 0.13 |      |
| v/c Ratio                         | 0.51 | 0.67  | 0.46 |      | 0.24 | 0.47  | 0.46 |      |
| Uniform Delay, d <sub>1</sub>     | 8.7  | 10.2  | 8.3  |      | 21.8 | 23.5  | 23.4 |      |
| Progression Factor                | 0.80 | 0.76  | 0.14 |      | 1.00 | 1.00  | 1.00 |      |
| Incremental Delay, d <sub>2</sub> | 4.5  | 2.3   | 0.4  |      | 1.2  | 3.7   | 1.7  |      |
| Delay (s)                         | 11.5 | 10.0  | 1.5  |      | 23.1 | 27.2  | 25.2 |      |
| Level of Service                  | B    | B     | A    |      | C    | C     | C    |      |
| Approach Delay (s)                |      | 10.3  | 1.5  |      |      |       | 25.4 |      |
| Approach LOS                      |      | B     | A    |      |      |       | C    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.3  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.61  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 59.0% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
5886: Capitol & 30th Street

4/4/2005



| Movement               | EBL   | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|-------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    | ↖     | ↕    |      |      | ↕     |      |      | ↕    |      |      |      |      |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0   | 4.0  |      |      | 4.0   |      |      | 4.0  |      |      |      |      |
| Lane Util. Factor      | 1.00  | 0.95 |      |      | 0.95  |      |      | 0.91 |      |      |      |      |
| Frt                    | 1.00  | 1.00 |      |      | 0.98  |      |      | 0.96 |      |      |      |      |
| Flt Protected          | 0.95  | 1.00 |      |      | 1.00  |      |      | 0.99 |      |      |      |      |
| Satd. Flow (prot)      | 1770  | 3539 |      |      | 3466  |      |      | 4864 |      |      |      |      |
| Flt Permitted          | 0.95  | 1.00 |      |      | 1.00  |      |      | 0.99 |      |      |      |      |
| Satd. Flow (perm)      | 1770  | 3539 |      |      | 3466  |      |      | 4864 |      |      |      |      |
| Volume (vph)           | 112   | 401  | 0    | 0    | 467   | 75   | 68   | 344  | 138  | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 112   | 401  | 0    | 0    | 467   | 75   | 68   | 344  | 138  | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0     | 0    | 0    | 0    | 16    | 0    | 0    | 76   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 112   | 401  | 0    | 0    | 526   | 0    | 0    | 474  | 0    | 0    | 0    | 0    |
| Turn Type              | Prot  |      |      | Perm |       |      |      |      |      |      |      |      |
| Protected Phases       | 7     | 4    |      |      | 8     |      |      | 2    |      |      |      |      |
| Permitted Phases       |       |      |      |      |       |      | 2    |      |      |      |      |      |
| Actuated Green, G (s)  | 19.0  | 50.0 |      |      | 28.0  |      |      | 24.0 |      |      |      |      |
| Effective Green, g (s) | 18.0  | 49.0 |      |      | 27.0  |      |      | 23.0 |      |      |      |      |
| Actuated g/C Ratio     | 0.22  | 0.61 |      |      | 0.34  |      |      | 0.29 |      |      |      |      |
| Clearance Time (s)     | 3.0   | 3.0  |      |      | 3.0   |      |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)     | 398   | 2168 |      |      | 1170  |      |      | 1398 |      |      |      |      |
| v/s Ratio Prot         | c0.06 | 0.11 |      |      | c0.15 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |       |      |      |      |       |      |      | 0.10 |      |      |      |      |
| v/c Ratio              | 0.28  | 0.18 |      |      | 0.45  |      |      | 0.34 |      |      |      |      |
| Uniform Delay, d1      | 25.6  | 6.8  |      |      | 20.7  |      |      | 22.5 |      |      |      |      |
| Progression Factor     | 1.01  | 2.30 |      |      | 0.30  |      |      | 0.69 |      |      |      |      |
| Incremental Delay, d2  | 1.5   | 0.2  |      |      | 0.4   |      |      | 0.6  |      |      |      |      |
| Delay (s)              | 27.5  | 15.7 |      |      | 6.6   |      |      | 16.2 |      |      |      |      |
| Level of Service       | C     | B    |      |      | A     |      |      | B    |      |      |      |      |
| Approach Delay (s)     |       | 18.3 |      |      | 6.6   |      |      | 16.2 |      |      | 0.0  |      |
| Approach LOS           |       | B    |      |      | A     |      |      | B    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 13.6  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.37  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 77.5% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
5888: Capitol & 29th Street

4/4/2005



| Movement                          | EBL  | EBT  | EBR   | WBL   | WBT  | WBR                  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|-------|-------|------|----------------------|------|------|------|------|------|------|
| Lane Configurations               |      | ↑↑   |       | ↖     | ↑↑   |                      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900  | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0  |       | 4.0   | 4.0  |                      |      |      |      |      | 4.0  |      |
| Lane Util. Factor                 |      | 0.95 |       | 1.00  | 0.95 |                      |      |      |      |      | 0.91 |      |
| Fr't                              |      | 0.96 |       | 1.00  | 1.00 |                      |      |      |      |      | 1.00 |      |
| Flt Protected                     |      | 1.00 |       | 0.95  | 1.00 |                      |      |      |      |      | 1.00 |      |
| Satd. Flow (prot)                 |      | 3215 |       | 1770  | 3539 |                      |      |      |      |      | 4879 |      |
| Flt Permitted                     |      | 1.00 |       | 0.37  | 1.00 |                      |      |      |      |      | 1.00 |      |
| Satd. Flow (perm)                 |      | 3215 |       | 688   | 3539 |                      |      |      |      |      | 4879 |      |
| Volume (vph)                      | 0    | 394  | 163   | 198   | 413  | 0                    | 0    | 0    | 0    | 123  | 1889 | 63   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 394  | 163   | 198   | 413  | 0                    | 0    | 0    | 0    | 123  | 1889 | 63   |
| RTOR Reduction (vph)              | 0    | 4    | 0     | 0     | 0    | 0                    | 0    | 0    | 0    | 0    | 4    | 0    |
| Lane Group Flow (vph)             | 0    | 553  | 0     | 198   | 413  | 0                    | 0    | 0    | 0    | 0    | 2071 | 0    |
| Parking (#/hr)                    |      | 0    | 0     |       |      |                      |      |      |      |      | 0    | 0    |
| Turn Type                         |      |      |       | Perm  |      |                      |      |      |      |      | Perm |      |
| Protected Phases                  |      | 4    |       |       | 8    |                      |      |      |      |      |      | 6    |
| Permitted Phases                  |      |      |       | 8     |      |                      |      |      |      | 6    |      |      |
| Actuated Green, G (s)             |      | 33.0 |       | 33.0  | 33.0 |                      |      |      |      |      | 41.0 |      |
| Effective Green, g (s)            |      | 32.0 |       | 32.0  | 32.0 |                      |      |      |      |      | 40.0 |      |
| Actuated g/C Ratio                |      | 0.40 |       | 0.40  | 0.40 |                      |      |      |      |      | 0.50 |      |
| Clearance Time (s)                |      | 3.0  |       | 3.0   | 3.0  |                      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |      | 1286 |       | 275   | 1416 |                      |      |      |      |      | 2440 |      |
| v/s Ratio Prot                    |      | 0.17 |       |       | 0.12 |                      |      |      |      |      |      |      |
| v/s Ratio Perm                    |      |      |       | c0.29 |      |                      |      |      |      |      | 0.42 |      |
| v/c Ratio                         |      | 0.43 |       | 0.72  | 0.29 |                      |      |      |      |      | 0.85 |      |
| Uniform Delay, d1                 |      | 17.4 |       | 20.2  | 16.3 |                      |      |      |      |      | 17.4 |      |
| Progression Factor                |      | 0.80 |       | 0.34  | 0.28 |                      |      |      |      |      | 0.51 |      |
| Incremental Delay, d2             |      | 0.8  |       | 14.2  | 0.5  |                      |      |      |      |      | 3.1  |      |
| Delay (s)                         |      | 14.7 |       | 21.0  | 5.0  |                      |      |      |      |      | 12.0 |      |
| Level of Service                  |      | B    |       | C     | A    |                      |      |      |      |      | B    |      |
| Approach Delay (s)                |      | 14.7 |       |       | 10.2 |                      |      | 0.0  |      |      | 12.0 |      |
| Approach LOS                      |      | B    |       |       | B    |                      |      | A    |      |      | B    |      |
| <b>Intersection Summary</b>       |      |      |       |       |      |                      |      |      |      |      |      |      |
| HCM Average Control Delay         |      |      | 12.1  |       |      | HCM Level of Service |      |      |      |      | B    |      |
| HCM Volume to Capacity ratio      |      |      | 0.79  |       |      |                      |      |      |      |      |      |      |
| Actuated Cycle Length (s)         |      |      | 80.0  |       |      | Sum of lost time (s) |      |      |      | 8.0  |      |      |
| Intersection Capacity Utilization |      |      | 77.5% |       |      | ICU Level of Service |      |      |      |      | D    |      |
| Analysis Period (min)             |      |      | 15    |       |      |                      |      |      |      |      |      |      |
| c Critical Lane Group             |      |      |       |       |      |                      |      |      |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
 5890: Capitol & 26th Street

4/4/2005



| Movement                          | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|-----------------------------------|------|------|------|------|-------|------|------|------|------|------|-------|------|
| Lane Configurations               | ↖    | ↗    |      | ↖    | ↗     |      |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)               | 4.0  | 4.0  |      | 4.0  | 4.0   |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor                 | 1.00 | 1.00 |      | 1.00 | 1.00  |      |      | 1.00 |      |      | 1.00  |      |
| Fr <sub>t</sub>                   | 1.00 | 1.00 |      | 1.00 | 0.99  |      |      | 0.97 |      |      | 0.98  |      |
| Fl <sub>t</sub> Protected         | 0.95 | 1.00 |      | 0.95 | 1.00  |      |      | 1.00 |      |      | 0.99  |      |
| Satd. Flow (prot)                 | 1770 | 1674 |      | 1770 | 1668  |      |      | 1621 |      |      | 1627  |      |
| Fl <sub>t</sub> Permitted         | 0.29 | 1.00 |      | 0.31 | 1.00  |      |      | 0.99 |      |      | 0.95  |      |
| Satd. Flow (perm)                 | 545  | 1674 |      | 583  | 1668  |      |      | 1613 |      |      | 1557  |      |
| Volume (vph)                      | 10   | 635  | 6    | 18   | 649   | 23   | 3    | 45   | 14   | 20   | 56    | 12   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)                   | 10   | 635  | 6    | 18   | 649   | 23   | 3    | 45   | 14   | 20   | 56    | 12   |
| RTOR Reduction (vph)              | 0    | 0    | 0    | 0    | 2     | 0    | 0    | 10   | 0    | 0    | 9     | 0    |
| Lane Group Flow (vph)             | 10   | 641  | 0    | 18   | 670   | 0    | 0    | 52   | 0    | 0    | 79    | 0    |
| Parking (#/hr)                    |      | 0    | 0    |      | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Turn Type                         | Perm |      |      | Perm |       |      | Perm |      |      | Perm |       |      |
| Protected Phases                  |      | 4    |      |      | 8     |      |      | 2    |      |      | 6     |      |
| Permitted Phases                  | 4    |      |      | 8    |       |      | 2    |      |      | 6    |       |      |
| Actuated Green, G (s)             | 37.0 | 37.0 |      | 37.0 | 37.0  |      |      | 17.0 |      |      | 17.0  |      |
| Effective Green, g (s)            | 36.0 | 36.0 |      | 36.0 | 36.0  |      |      | 16.0 |      |      | 16.0  |      |
| Actuated g/C Ratio                | 0.60 | 0.60 |      | 0.60 | 0.60  |      |      | 0.27 |      |      | 0.27  |      |
| Clearance Time (s)                | 3.0  | 3.0  |      | 3.0  | 3.0   |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)                | 327  | 1004 |      | 350  | 1001  |      |      | 430  |      |      | 415   |      |
| v/s Ratio Prot                    |      | 0.38 |      |      | c0.40 |      |      |      |      |      |       |      |
| v/s Ratio Perm                    | 0.02 |      |      | 0.03 |       |      |      | 0.03 |      |      | c0.05 |      |
| v/c Ratio                         | 0.03 | 0.64 |      | 0.05 | 0.67  |      |      | 0.12 |      |      | 0.19  |      |
| Uniform Delay, d <sub>1</sub>     | 4.9  | 7.8  |      | 5.0  | 8.0   |      |      | 16.7 |      |      | 17.0  |      |
| Progression Factor                | 1.00 | 1.00 |      | 1.00 | 1.00  |      |      | 1.00 |      |      | 0.69  |      |
| Incremental Delay, d <sub>2</sub> | 0.2  | 3.1  |      | 0.3  | 3.6   |      |      | 0.6  |      |      | 1.0   |      |
| Delay (s)                         | 5.1  | 10.9 |      | 5.2  | 11.6  |      |      | 17.2 |      |      | 12.8  |      |
| Level of Service                  | A    | B    |      | A    | B     |      |      | B    |      |      | B     |      |
| Approach Delay (s)                |      | 10.8 |      |      | 11.4  |      |      | 17.2 |      |      | 12.8  |      |
| Approach LOS                      |      | B    |      |      | B     |      |      | B    |      |      | B     |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.5  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.52  |                      |     |
| Actuated Cycle Length (s)         | 60.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 53.7% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

# HCM Signalized Intersection Capacity Analysis

6481: J Street & 28th Street

4/4/2005



| Movement                          | EBL  | EBT  | EBR  | WBL  | WBT  | WBR    | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|------|------|------|--------|------|------|------|------|------|------|
| Lane Configurations               |      | ↑↑↑  |      |      |      | ↗      |      | ↑    |      |      | ↓    |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900 | 1900 | 1900   | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0  |      |      |      |        |      | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor                 |      | 0.91 |      |      |      |        |      | 1.00 |      |      | 1.00 |      |
| Fr <sub>t</sub>                   |      | 0.99 |      |      |      |        |      | 0.93 |      |      | 1.00 |      |
| Fl <sub>t</sub> Protected         |      | 1.00 |      |      |      |        |      | 1.00 |      |      | 0.99 |      |
| Satd. Flow (prot)                 |      | 4885 |      |      |      |        |      | 1560 |      |      | 1661 |      |
| Fl <sub>t</sub> Permitted         |      | 1.00 |      |      |      |        |      | 1.00 |      |      | 0.94 |      |
| Satd. Flow (perm)                 |      | 4885 |      |      |      |        |      | 1560 |      |      | 1572 |      |
| Volume (vph)                      | 33   | 1846 | 71   | 0    | 0    | 0      | 0    | 174  | 186  | 11   | 50   | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00   | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 33   | 1846 | 71   | 0    | 0    | 0      | 0    | 174  | 186  | 11   | 50   | 0    |
| RTOR Reduction (vph)              | 0    | 5    | 0    | 0    | 0    | 0      | 0    | 6    | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 0    | 1945 | 0    | 0    | 0    | 0      | 0    | 354  | 0    | 0    | 61   | 0    |
| Parking (#/hr)                    | 0    | 0    | 0    |      |      |        |      | 0    | 0    | 0    | 0    | 0    |
| Turn Type                         | Perm |      |      |      |      | custom |      |      |      | Perm |      |      |
| Protected Phases                  |      | 4    |      |      |      |        |      | 2    |      |      | 6    |      |
| Permitted Phases                  | 4    |      |      |      |      | 8      |      |      |      | 6    |      |      |
| Actuated Green, G (s)             |      | 43.0 |      |      |      |        |      | 31.0 |      |      | 31.0 |      |
| Effective Green, g (s)            |      | 42.0 |      |      |      |        |      | 30.0 |      |      | 30.0 |      |
| Actuated g/C Ratio                |      | 0.52 |      |      |      |        |      | 0.38 |      |      | 0.38 |      |
| Clearance Time (s)                |      | 3.0  |      |      |      |        |      | 3.0  |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |      | 2565 |      |      |      |        |      | 585  |      |      | 590  |      |
| v/s Ratio Prot                    |      |      |      |      |      |        |      | 0.23 |      |      |      |      |
| v/s Ratio Perm                    |      | 0.40 |      |      |      |        |      |      |      |      | 0.04 |      |
| v/c Ratio                         |      | 0.76 |      |      |      |        |      | 0.61 |      |      | 0.10 |      |
| Uniform Delay, d <sub>1</sub>     |      | 15.0 |      |      |      |        |      | 20.2 |      |      | 16.3 |      |
| Progression Factor                |      | 1.00 |      |      |      |        |      | 0.53 |      |      | 1.00 |      |
| Incremental Delay, d <sub>2</sub> |      | 2.2  |      |      |      |        |      | 4.6  |      |      | 0.4  |      |
| Delay (s)                         |      | 17.2 |      |      |      |        |      | 15.4 |      |      | 16.6 |      |
| Level of Service                  |      | B    |      |      |      |        |      | B    |      |      | B    |      |
| Approach Delay (s)                |      | 17.2 |      |      | 0.0  |        |      | 15.4 |      |      | 16.6 |      |
| Approach LOS                      |      | B    |      |      | A    |        |      | B    |      |      | B    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 16.9  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.69  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 65.1% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
6482: K Street & 28th Street

4/4/2005



| Movement                          | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations               |      | ↕    | ↗    |      | ↕    | ↗    |      | ↕    | ↗    |      | ↕    | ↗    |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0  | 4.0  |      | 4.0  | 4.0  |      | 4.0  | 4.0  |      | 4.0  | 4.0  |
| Lane Util. Factor                 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |
| Fr <sub>t</sub>                   |      | 1.00 | 0.85 |      | 1.00 | 0.85 |      | 1.00 | 0.85 |      | 1.00 | 0.85 |
| Flt Protected                     |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 0.99 | 1.00 |      | 0.99 | 1.00 |
| Satd. Flow (prot)                 |      | 1673 | 1425 |      | 1672 | 1425 |      | 1662 | 1425 |      | 1658 | 1425 |
| Flt Permitted                     |      | 0.97 | 1.00 |      | 0.97 | 1.00 |      | 0.93 | 1.00 |      | 0.90 | 1.00 |
| Satd. Flow (perm)                 |      | 1633 | 1425 |      | 1621 | 1425 |      | 1553 | 1425 |      | 1509 | 1425 |
| Volume (vph)                      | 16   | 398  | 132  | 35   | 623  | 120  | 37   | 174  | 160  | 42   | 146  | 33   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 16   | 398  | 132  | 35   | 623  | 120  | 37   | 174  | 160  | 42   | 146  | 33   |
| RTOR Reduction (vph)              | 0    | 0    | 49   | 0    | 0    | 28   | 0    | 0    | 116  | 0    | 0    | 24   |
| Lane Group Flow (vph)             | 0    | 414  | 83   | 0    | 658  | 92   | 0    | 211  | 44   | 0    | 188  | 9    |
| Parking (#/hr)                    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Turn Type                         | Perm |      | Perm | Perm |      | Perm | Perm |      | Perm | Perm |      | Perm |
| Protected Phases                  |      | 4    |      |      | 8    |      |      | 2    |      |      | 6    |      |
| Permitted Phases                  | 4    |      | 4    | 8    |      | 8    | 2    |      | 2    | 6    |      | 6    |
| Actuated Green, G (s)             |      | 51.0 | 51.0 |      | 51.0 | 51.0 |      | 23.0 | 23.0 |      | 23.0 | 23.0 |
| Effective Green, g (s)            |      | 50.0 | 50.0 |      | 50.0 | 50.0 |      | 22.0 | 22.0 |      | 22.0 | 22.0 |
| Actuated g/C Ratio                |      | 0.62 | 0.62 |      | 0.62 | 0.62 |      | 0.28 | 0.28 |      | 0.28 | 0.28 |
| Clearance Time (s)                |      | 3.0  | 3.0  |      | 3.0  | 3.0  |      | 3.0  | 3.0  |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)                |      | 1021 | 891  |      | 1013 | 891  |      | 427  | 392  |      | 415  | 392  |
| v/s Ratio Prot                    |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm                    |      | 0.25 | 0.06 |      | 0.41 | 0.06 |      | 0.14 | 0.03 |      | 0.12 | 0.01 |
| v/c Ratio                         |      | 0.41 | 0.09 |      | 0.65 | 0.10 |      | 0.49 | 0.11 |      | 0.45 | 0.02 |
| Uniform Delay, d <sub>1</sub>     |      | 7.5  | 6.0  |      | 9.5  | 6.0  |      | 24.3 | 21.7 |      | 24.0 | 21.2 |
| Progression Factor                |      | 1.00 | 1.00 |      | 0.37 | 0.03 |      | 0.96 | 1.23 |      | 1.01 | 0.98 |
| Incremental Delay, d <sub>2</sub> |      | 1.2  | 0.2  |      | 2.8  | 0.2  |      | 3.6  | 0.5  |      | 3.5  | 0.1  |
| Delay (s)                         |      | 8.7  | 6.2  |      | 6.3  | 0.3  |      | 27.0 | 27.2 |      | 27.7 | 20.8 |
| Level of Service                  |      | A    | A    |      | A    | A    |      | C    | C    |      | C    | C    |
| Approach Delay (s)                |      | 8.1  |      |      | 5.4  |      |      | 27.1 |      |      | 26.7 |      |
| Approach LOS                      |      | A    |      |      | A    |      |      | C    |      |      | C    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 12.8  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.60  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 91.1% | ICU Level of Service | F   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6483: L Street & 28th Street

4/4/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|-------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations    |      | ↕     |      |      | ↕    |      |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      | 4.0  |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor      |      | 1.00  |      |      | 1.00 |      |      | 1.00 |      |      | 1.00  |      |
| Frt                    |      | 0.99  |      |      | 0.96 |      |      | 1.00 |      |      | 0.99  |      |
| Flt Protected          |      | 0.99  |      |      | 0.99 |      |      | 0.99 |      |      | 0.99  |      |
| Satd. Flow (prot)      |      | 1646  |      |      | 1603 |      |      | 1659 |      |      | 1648  |      |
| Flt Permitted          |      | 0.87  |      |      | 0.93 |      |      | 0.92 |      |      | 0.92  |      |
| Satd. Flow (perm)      |      | 1449  |      |      | 1498 |      |      | 1535 |      |      | 1523  |      |
| Volume (vph)           | 117  | 330   | 20   | 25   | 117  | 55   | 43   | 243  | 7    | 49   | 251   | 22   |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 117  | 330   | 20   | 25   | 117  | 55   | 43   | 243  | 7    | 49   | 251   | 22   |
| RTOR Reduction (vph)   | 0    | 2     | 0    | 0    | 18   | 0    | 0    | 1    | 0    | 0    | 3     | 0    |
| Lane Group Flow (vph)  | 0    | 465   |      | 0    | 179  |      | 0    | 292  |      | 0    | 319   |      |
| Parking (#/hr)         | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Turn Type              | Perm |       |      | Perm |      |      | Perm |      |      | Perm |       |      |
| Protected Phases       |      | 2     |      |      | 6    |      |      | 3    |      |      | 7     |      |
| Permitted Phases       | 2    |       |      | 6    |      |      | 3    |      | 3    | 7    |       |      |
| Actuated Green, G (s)  |      | 42.0  |      |      | 42.0 |      |      | 32.0 |      |      | 32.0  |      |
| Effective Green, g (s) |      | 41.0  |      |      | 41.0 |      |      | 31.0 |      |      | 31.0  |      |
| Actuated g/C Ratio     |      | 0.51  |      |      | 0.51 |      |      | 0.39 |      |      | 0.39  |      |
| Clearance Time (s)     |      | 3.0   |      |      | 3.0  |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)     |      | 743   |      |      | 768  |      |      | 595  |      |      | 590   |      |
| v/s Ratio Prot         |      |       |      |      |      |      |      |      |      |      |       |      |
| v/s Ratio Perm         |      | c0.32 |      |      | 0.12 |      |      | 0.19 |      |      | c0.21 |      |
| v/c Ratio              |      | 0.63  |      |      | 0.23 |      |      | 0.49 |      |      | 0.54  |      |
| Uniform Delay, d1      |      | 14.0  |      |      | 10.8 |      |      | 18.5 |      |      | 19.0  |      |
| Progression Factor     |      | 1.00  |      |      | 0.26 |      |      | 0.71 |      |      | 0.61  |      |
| Incremental Delay, d2  |      | 4.0   |      |      | 0.6  |      |      | 2.7  |      |      | 3.4   |      |
| Delay (s)              |      | 18.0  |      |      | 3.4  |      |      | 15.9 |      |      | 14.9  |      |
| Level of Service       |      | B     |      |      | A    |      |      | B    |      |      | B     |      |
| Approach Delay (s)     |      | 18.0  |      |      | 3.4  |      |      | 15.9 |      |      | 14.9  |      |
| Approach LOS           |      | B     |      |      | A    |      |      | B    |      |      | B     |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 14.5  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.59  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 69.3% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
6484: Capitol & 28th Street

4/4/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|-------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations    |      | ↕     |      |      | ↕    |      |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      | 4.0  |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor      |      | 1.00  |      |      | 0.95 |      |      | 1.00 |      |      | 1.00  |      |
| Frt                    |      | 0.95  |      |      | 0.99 |      |      | 0.96 |      |      | 0.99  |      |
| Flt Protected          |      | 1.00  |      |      | 1.00 |      |      | 1.00 |      |      | 0.99  |      |
| Satd. Flow (prot)      |      | 1589  |      |      | 3323 |      |      | 1605 |      |      | 1652  |      |
| Flt Permitted          |      | 0.99  |      |      | 0.90 |      |      | 0.98 |      |      | 0.92  |      |
| Satd. Flow (perm)      |      | 1570  |      |      | 3002 |      |      | 1573 |      |      | 1531  |      |
| Volume (vph)           | 12   | 410   | 258  | 37   | 651  | 45   | 14   | 166  | 76   | 55   | 258   | 15   |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 12   | 410   | 258  | 37   | 651  | 45   | 14   | 166  | 76   | 55   | 258   | 15   |
| RTOR Reduction (vph)   | 0    | 28    | 0    | 0    | 6    | 0    | 0    | 19   | 0    | 0    | 2     | 0    |
| Lane Group Flow (vph)  | 0    | 652   | 0    | 0    | 727  | 0    | 0    | 237  | 0    | 0    | 326   | 0    |
| Parking (#/hr)         | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Turn Type              | Perm |       | Perm |      | Perm |      | Perm |      | Perm |      | Perm  |      |
| Protected Phases       |      | 4     |      |      | 8    |      |      | 2    |      |      | 6     |      |
| Permitted Phases       | 4    |       |      | 8    |      |      | 2    |      |      | 6    |       |      |
| Actuated Green, G (s)  |      | 47.0  |      |      | 47.0 |      |      | 27.0 |      |      | 27.0  |      |
| Effective Green, g (s) |      | 46.0  |      |      | 46.0 |      |      | 26.0 |      |      | 26.0  |      |
| Actuated g/C Ratio     |      | 0.57  |      |      | 0.57 |      |      | 0.32 |      |      | 0.32  |      |
| Clearance Time (s)     |      | 3.0   |      |      | 3.0  |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)     |      | 903   |      |      | 1726 |      |      | 511  |      |      | 498   |      |
| v/s Ratio Prot         |      |       |      |      |      |      |      |      |      |      |       |      |
| v/s Ratio Perm         |      | c0.42 |      |      | 0.24 |      |      | 0.15 |      |      | c0.21 |      |
| v/c Ratio              |      | 0.72  |      |      | 0.42 |      |      | 0.46 |      |      | 0.65  |      |
| Uniform Delay, d1      |      | 12.4  |      |      | 9.5  |      |      | 21.5 |      |      | 23.1  |      |
| Progression Factor     |      | 1.00  |      |      | 0.44 |      |      | 0.91 |      |      | 0.38  |      |
| Incremental Delay, d2  |      | 5.0   |      |      | 0.7  |      |      | 2.4  |      |      | 5.9   |      |
| Delay (s)              |      | 17.3  |      |      | 4.9  |      |      | 21.9 |      |      | 14.7  |      |
| Level of Service       |      | B     |      |      | A    |      |      | C    |      |      | B     |      |
| Approach Delay (s)     |      | 17.3  |      |      | 4.9  |      |      | 21.9 |      |      | 14.7  |      |
| Approach LOS           |      | B     |      |      | A    |      |      | C    |      |      | B     |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 12.9  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.70  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 88.4% | ICU Level of Service | E   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6485: N Street & 28th Street

4/4/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      |      | 4.0  |      |      | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00 |      |      | 1.00 |      |      | 1.00 |      |      | 1.00 |      |
| Fr't                   |      | 0.99 |      |      | 0.99 |      |      | 0.95 |      |      | 1.00 |      |
| Flt Protected          |      | 0.99 |      |      | 1.00 |      |      | 1.00 |      |      | 0.96 |      |
| Satd. Flow (prot)      |      | 1640 |      |      | 1649 |      |      | 1598 |      |      | 1608 |      |
| Flt Permitted          |      | 0.65 |      |      | 0.97 |      |      | 1.00 |      |      | 0.63 |      |
| Satd. Flow (perm)      |      | 1074 |      |      | 1603 |      |      | 1592 |      |      | 1059 |      |
| Volume (vph)           | 88   | 228  | 23   | 37   | 594  | 72   | 3    | 139  | 74   | 403  | 113  | 17   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 88   | 228  | 23   | 37   | 594  | 72   | 3    | 139  | 74   | 403  | 113  | 17   |
| RTOR Reduction (vph)   | 0    | 3    | 0    | 0    | 5    | 0    | 0    | 24   | 0    | 0    | 2    | 0    |
| Lane Group Flow (vph)  | 0    | 336  | 0    | 0    | 698  | 0    | 0    | 192  | 0    | 0    | 531  | 0    |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      |      | Perm |      |      | Perm |      |      | Perm |      |      |
| Protected Phases       |      | 2    |      |      | 6    |      |      | 8    |      |      | 4    |      |
| Permitted Phases       | 2    |      |      | 6    |      |      | 8    | 8    |      | 4    |      | 4    |
| Actuated Green, G (s)  |      | 35.0 |      |      | 35.0 |      |      | 39.0 |      |      | 39.0 |      |
| Effective Green, g (s) |      | 34.0 |      |      | 34.0 |      |      | 38.0 |      |      | 38.0 |      |
| Actuated g/C Ratio     |      | 0.42 |      |      | 0.42 |      |      | 0.48 |      |      | 0.48 |      |
| Clearance Time (s)     |      | 3.0  |      |      | 3.0  |      |      | 3.0  |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 456  |      |      | 681  |      |      | 756  |      |      | 503  |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      | 0.31 |      |      | 0.44 |      |      | 0.12 |      |      | 0.50 |      |
| v/c Ratio              |      | 0.74 |      |      | 1.02 |      |      | 0.25 |      |      | 1.06 |      |
| Uniform Delay, d1      |      | 19.2 |      |      | 23.0 |      |      | 12.5 |      |      | 21.0 |      |
| Progression Factor     |      | 1.00 |      |      | 0.69 |      |      | 1.00 |      |      | 0.89 |      |
| Incremental Delay, d2  |      | 10.1 |      |      | 17.4 |      |      | 0.8  |      |      | 50.1 |      |
| Delay (s)              |      | 29.4 |      |      | 33.2 |      |      | 13.4 |      |      | 68.8 |      |
| Level of Service       |      | C    |      |      | C    |      |      | B    |      |      | E    |      |
| Approach Delay (s)     |      | 29.4 |      |      | 33.2 |      |      | 13.4 |      |      | 68.8 |      |
| Approach LOS           |      | C    |      |      | C    |      |      | B    |      |      | E    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 40.7  | HCM Level of Service | D   |
| HCM Volume to Capacity ratio      | 1.04  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 99.3% | ICU Level of Service | F   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
6511: K Street & Alhambra

4/4/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|-------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations    |      | ↕     | ↗    |      | ↕    |      |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      | 4.0   | 4.0  |      | 4.0  |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor      |      | 1.00  | 1.00 |      | 1.00 |      |      | 0.95 |      |      | 0.95  |      |
| Frt                    |      | 1.00  | 0.85 |      | 0.99 |      |      | 0.98 |      |      | 0.96  |      |
| Flt Protected          |      | 0.97  | 1.00 |      | 0.99 |      |      | 0.99 |      |      | 1.00  |      |
| Satd. Flow (prot)      |      | 1803  | 1583 |      | 1816 |      |      | 3423 |      |      | 3404  |      |
| Flt Permitted          |      | 0.73  | 1.00 |      | 0.89 |      |      | 0.60 |      |      | 0.95  |      |
| Satd. Flow (perm)      |      | 1367  | 1583 |      | 1636 |      |      | 2088 |      |      | 3230  |      |
| Volume (vph)           | 165  | 83    | 267  | 39   | 97   | 14   | 111  | 358  | 85   | 12   | 737   | 250  |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 165  | 83    | 267  | 39   | 97   | 14   | 111  | 358  | 85   | 12   | 737   | 250  |
| RTOR Reduction (vph)   | 0    | 0     | 88   | 0    | 5    | 0    | 0    | 18   | 0    | 0    | 41    | 0    |
| Lane Group Flow (vph)  | 0    | 248   | 179  | 0    | 145  | 0    | 0    | 536  | 0    | 0    | 958   | 0    |
| Turn Type              | Perm |       | Perm | Perm |      |      | Perm |      |      | Perm |       |      |
| Protected Phases       |      | 4     |      |      | 8    |      |      | 2    |      |      |       | 6    |
| Permitted Phases       | 4    |       | 4    | 8    |      |      | 2    |      |      | 6    |       |      |
| Actuated Green, G (s)  |      | 34.0  | 34.0 |      | 34.0 |      |      | 40.0 |      |      | 40.0  |      |
| Effective Green, g (s) |      | 33.0  | 33.0 |      | 33.0 |      |      | 39.0 |      |      | 39.0  |      |
| Actuated g/C Ratio     |      | 0.41  | 0.41 |      | 0.41 |      |      | 0.49 |      |      | 0.49  |      |
| Clearance Time (s)     |      | 3.0   | 3.0  |      | 3.0  |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)     |      | 564   | 653  |      | 675  |      |      | 1018 |      |      | 1575  |      |
| v/s Ratio Prot         |      |       |      |      |      |      |      |      |      |      |       |      |
| v/s Ratio Perm         |      | c0.18 | 0.11 |      | 0.09 |      |      | 0.26 |      |      | c0.30 |      |
| v/c Ratio              |      | 0.44  | 0.27 |      | 0.22 |      |      | 0.53 |      |      | 0.61  |      |
| Uniform Delay, d1      |      | 16.9  | 15.6 |      | 15.2 |      |      | 14.1 |      |      | 14.9  |      |
| Progression Factor     |      | 0.78  | 0.67 |      | 1.00 |      |      | 1.26 |      |      | 0.83  |      |
| Incremental Delay, d2  |      | 2.3   | 1.0  |      | 0.7  |      |      | 0.8  |      |      | 0.7   |      |
| Delay (s)              |      | 15.4  | 11.4 |      | 15.9 |      |      | 18.7 |      |      | 13.1  |      |
| Level of Service       |      | B     | B    |      | B    |      |      | B    |      |      | B     |      |
| Approach Delay (s)     |      | 13.3  |      |      | 15.9 |      |      | 18.7 |      |      | 13.1  |      |
| Approach LOS           |      | B     |      |      | B    |      |      | B    |      |      | B     |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 14.7  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.53  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 74.7% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 9622: K Street & 30th Street

4/4/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    | ↶    | ↷    |      |      | ↶     | ↷    |      | ↶↷   |      |      |      |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0  | 4.0  |      |      | 4.0   |      |      | 4.0  |      |      |      |      |
| Lane Util. Factor      | 1.00 | 1.00 |      |      | 1.00  |      |      | 0.91 |      |      |      |      |
| Frt                    | 1.00 | 1.00 |      |      | 1.00  |      |      | 0.97 |      |      |      |      |
| Flt Protected          | 0.95 | 1.00 |      |      | 1.00  |      |      | 0.99 |      |      |      |      |
| Satd. Flow (prot)      | 1770 | 1863 |      |      | 1863  |      |      | 4892 |      |      |      |      |
| Flt Permitted          | 0.36 | 1.00 |      |      | 1.00  |      |      | 0.99 |      |      |      |      |
| Satd. Flow (perm)      | 664  | 1863 |      |      | 1863  |      |      | 4892 |      |      |      |      |
| Volume (vph)           | 90   | 283  | 0    | 0    | 494   | 0    | 218  | 675  | 209  | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 90   | 283  | 0    | 0    | 494   | 0    | 218  | 675  | 209  | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 48   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 90   | 283  | 0    | 0    | 494   | 0    | 0    | 1054 | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      |      |      |       | Perm |      | Perm |      |      |      |      |
| Protected Phases       |      | 4    |      |      | 8     |      |      | 2    |      |      |      |      |
| Permitted Phases       | 4    |      |      |      |       | 8    | 2    |      |      |      |      |      |
| Actuated Green, G (s)  | 42.0 | 42.0 |      |      | 42.0  |      |      | 32.0 |      |      |      |      |
| Effective Green, g (s) | 41.0 | 41.0 |      |      | 41.0  |      |      | 31.0 |      |      |      |      |
| Actuated g/C Ratio     | 0.51 | 0.51 |      |      | 0.51  |      |      | 0.39 |      |      |      |      |
| Clearance Time (s)     | 3.0  | 3.0  |      |      | 3.0   |      |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)     | 340  | 955  |      |      | 955   |      |      | 1896 |      |      |      |      |
| v/s Ratio Prot         |      | 0.15 |      |      | c0.27 |      |      |      |      |      |      |      |
| v/s Ratio Perm         | 0.14 |      |      |      |       |      |      | 0.22 |      |      |      |      |
| v/c Ratio              | 0.26 | 0.30 |      |      | 0.52  |      |      | 0.56 |      |      |      |      |
| Uniform Delay, d1      | 11.0 | 11.2 |      |      | 12.9  |      |      | 19.1 |      |      |      |      |
| Progression Factor     | 0.54 | 0.56 |      |      | 0.58  |      |      | 0.48 |      |      |      |      |
| Incremental Delay, d2  | 1.6  | 0.7  |      |      | 1.8   |      |      | 1.1  |      |      |      |      |
| Delay (s)              | 7.5  | 6.9  |      |      | 9.2   |      |      | 10.3 |      |      |      |      |
| Level of Service       | A    | A    |      |      | A     |      |      | B    |      |      |      |      |
| Approach Delay (s)     |      | 7.1  |      |      | 9.2   |      |      | 10.3 |      |      | 0.0  |      |
| Approach LOS           |      | A    |      |      | A     |      |      | B    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 9.4   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.53  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 75.4% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

CUMULATIVE PLUS SUTTER PROJECT  
WITH CENTRAL CITY TWO WAY CONVERSION

AM Peak Hour

Signalized Intersections

(am11)



HCM Signalized Intersection Capacity Analysis  
 2004: L Street & 21th Street

6/1/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|-------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↕     |      |      | ↗    |      |      | ↕↗   |      |      |      |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      | 4.0  |      |      | 4.0  |      |      |      |      |
| Lane Util. Factor      |      | 1.00  |      |      | 1.00 |      |      | 0.95 |      |      |      |      |
| Frt                    |      | 1.00  |      |      | 0.97 |      |      | 1.00 |      |      |      |      |
| Flt Protected          |      | 0.99  |      |      | 1.00 |      |      | 0.99 |      |      |      |      |
| Satd. Flow (prot)      |      | 1665  |      |      | 1627 |      |      | 3330 |      |      |      |      |
| Flt Permitted          |      | 0.90  |      |      | 1.00 |      |      | 0.99 |      |      |      |      |
| Satd. Flow (perm)      |      | 1507  |      |      | 1627 |      |      | 3330 |      |      |      |      |
| Volume (vph)           | 53   | 317   | 0    | 0    | 291  | 81   | 149  | 1225 | 40   | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 53   | 317   | 0    | 0    | 291  | 81   | 149  | 1225 | 40   | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0    | 0     | 0    | 0    | 17   | 0    | 0    | 3    | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 370   | 0    | 0    | 355  | 0    | 0    | 1411 | 0    | 0    | 0    | 0    |
| Parking (#/hr)         | 0    | 0     |      |      | 0    | 0    | 0    | 0    | 0    |      |      |      |
| Turn Type              | Perm |       |      |      |      |      |      |      |      | Perm |      |      |
| Protected Phases       |      | 2     |      |      | 6    |      |      | 8    |      |      |      |      |
| Permitted Phases       | 2    |       |      |      |      |      | 8    | 8    |      |      |      |      |
| Actuated Green, G (s)  |      | 22.0  |      |      | 22.0 |      |      | 32.0 |      |      |      |      |
| Effective Green, g (s) |      | 21.0  |      |      | 21.0 |      |      | 31.0 |      |      |      |      |
| Actuated g/C Ratio     |      | 0.35  |      |      | 0.35 |      |      | 0.52 |      |      |      |      |
| Clearance Time (s)     |      | 3.0   |      |      | 3.0  |      |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)     |      | 527   |      |      | 569  |      |      | 1721 |      |      |      |      |
| v/s Ratio Prot         |      |       |      |      | 0.22 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      | c0.25 |      |      |      |      |      | 0.42 |      |      |      |      |
| v/c Ratio              |      | 0.70  |      |      | 0.62 |      |      | 0.82 |      |      |      |      |
| Uniform Delay, d1      |      | 16.8  |      |      | 16.2 |      |      | 12.2 |      |      |      |      |
| Progression Factor     |      | 0.42  |      |      | 0.88 |      |      | 1.00 |      |      |      |      |
| Incremental Delay, d2  |      | 7.0   |      |      | 4.7  |      |      | 4.5  |      |      |      |      |
| Delay (s)              |      | 14.1  |      |      | 18.9 |      |      | 16.7 |      |      |      |      |
| Level of Service       |      | B     |      |      | B    |      |      | B    |      |      |      |      |
| Approach Delay (s)     |      | 14.1  |      |      | 18.9 |      |      | 16.7 |      |      | 0.0  |      |
| Approach LOS           |      | B     |      |      | B    |      |      | B    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 16.6  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.77  |                      |     |
| Actuated Cycle Length (s)         | 60.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 89.3% | ICU Level of Service | E   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 2012: J Street & 21th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations    |      | ↑↑↑  |      |      |      |      |      | ↑↑    |      |      |      |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      |      |      |      |      | 4.0   |      |      |      |      |
| Lane Util. Factor      |      | 0.91 |      |      |      |      |      | 0.95  |      |      |      |      |
| Fr't                   |      | 1.00 |      |      |      |      |      | 0.98  |      |      |      |      |
| Flt Protected          |      | 1.00 |      |      |      |      |      | 1.00  |      |      |      |      |
| Satd. Flow (prot)      |      | 4914 |      |      |      |      |      | 3284  |      |      |      |      |
| Flt Permitted          |      | 1.00 |      |      |      |      |      | 1.00  |      |      |      |      |
| Satd. Flow (perm)      |      | 4914 |      |      |      |      |      | 3284  |      |      |      |      |
| Volume (vph)           | 6    | 1040 | 0    | 0    | 0    | 0    | 0    | 1117  | 205  | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 6    | 1040 | 0    | 0    | 0    | 0    | 0    | 1117  | 205  | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0    | 1    | 0    | 0    | 0    | 0    | 0    | 4     | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 1045 | 0    | 0    | 0    | 0    | 0    | 1318  | 0    | 0    | 0    | 0    |
| Parking (#/hr)         | 0    | 0    |      |      |      |      |      | 0     | 0    |      |      |      |
| Turn Type              |      | Perm |      |      |      |      |      |       |      |      |      |      |
| Protected Phases       |      | 4    |      |      |      |      |      | 2     |      |      |      |      |
| Permitted Phases       |      | 4    |      |      |      |      |      |       |      |      |      |      |
| Actuated Green, G (s)  |      | 19.0 |      |      |      |      |      | 35.0  |      |      |      |      |
| Effective Green, g (s) |      | 18.0 |      |      |      |      |      | 34.0  |      |      |      |      |
| Actuated g/C Ratio     |      | 0.30 |      |      |      |      |      | 0.57  |      |      |      |      |
| Clearance Time (s)     |      | 3.0  |      |      |      |      |      | 3.0   |      |      |      |      |
| Lane Grp Cap (vph)     |      | 1474 |      |      |      |      |      | 1861  |      |      |      |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      | c0.40 |      |      |      |      |
| v/s Ratio Perm         |      | 0.21 |      |      |      |      |      |       |      |      |      |      |
| v/c Ratio              |      | 0.71 |      |      |      |      |      | 0.71  |      |      |      |      |
| Uniform Delay, d1      |      | 18.7 |      |      |      |      |      | 9.4   |      |      |      |      |
| Progression Factor     |      | 0.61 |      |      |      |      |      | 0.19  |      |      |      |      |
| Incremental Delay, d2  |      | 2.5  |      |      |      |      |      | 1.3   |      |      |      |      |
| Delay (s)              |      | 14.0 |      |      |      |      |      | 3.1   |      |      |      |      |
| Level of Service       |      | B    |      |      |      |      |      | A     |      |      |      |      |
| Approach Delay (s)     |      | 14.0 |      |      | 0.0  |      |      | 3.1   |      |      | 0.0  |      |
| Approach LOS           |      | B    |      |      | A    |      |      | A     |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 7.9   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.71  |                      |     |
| Actuated Cycle Length (s)         | 60.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 64.3% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

# HCM Signalized Intersection Capacity Analysis

2074: J Street & 19th Street

6/1/2005



| Movement                          | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations               |      | ↑↑↑  |      |      |      |      |      |      |      |      | ↔↑   |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0  |      |      |      |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor                 |      | 0.91 |      |      |      |      |      |      |      |      | 0.95 |      |
| Fr <sub>t</sub>                   |      | 0.96 |      |      |      |      |      |      |      |      | 1.00 |      |
| Fl <sub>t</sub> Protected         |      | 1.00 |      |      |      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (prot)                 |      | 4731 |      |      |      |      |      |      |      |      | 3315 |      |
| Fl <sub>t</sub> Permitted         |      | 1.00 |      |      |      |      |      |      |      |      | 0.99 |      |
| Satd. Flow (perm)                 |      | 4731 |      |      |      |      |      |      |      |      | 3315 |      |
| Volume (vph)                      | 0    | 1032 | 346  | 0    | 0    | 0    | 0    | 0    | 0    | 108  | 267  | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 1032 | 346  | 0    | 0    | 0    | 0    | 0    | 0    | 108  | 267  | 0    |
| RTOR Reduction (vph)              | 0    | 101  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 44   | 0    |
| Lane Group Flow (vph)             | 0    | 1277 | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 331  | 0    |
| Parking (#/hr)                    |      | 0    | 0    |      |      |      |      |      |      | 0    | 0    |      |
| Turn Type                         |      |      |      |      |      |      |      |      |      | Perm |      |      |
| Protected Phases                  |      | 4    |      |      |      |      |      |      |      |      | 6    |      |
| Permitted Phases                  |      |      |      |      |      |      |      |      |      | 6    |      |      |
| Actuated Green, G (s)             |      | 31.0 |      |      |      |      |      |      |      |      | 23.0 |      |
| Effective Green, g (s)            |      | 30.0 |      |      |      |      |      |      |      |      | 22.0 |      |
| Actuated g/C Ratio                |      | 0.50 |      |      |      |      |      |      |      |      | 0.37 |      |
| Clearance Time (s)                |      | 3.0  |      |      |      |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |      | 2366 |      |      |      |      |      |      |      |      | 1216 |      |
| v/s Ratio Prot                    |      | 0.27 |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm                    |      |      |      |      |      |      |      |      |      |      | 0.10 |      |
| v/c Ratio                         |      | 0.54 |      |      |      |      |      |      |      |      | 0.27 |      |
| Uniform Delay, d <sub>1</sub>     |      | 10.3 |      |      |      |      |      |      |      |      | 13.4 |      |
| Progression Factor                |      | 1.00 |      |      |      |      |      |      |      |      | 1.00 |      |
| Incremental Delay, d <sub>2</sub> |      | 0.9  |      |      |      |      |      |      |      |      | 0.6  |      |
| Delay (s)                         |      | 11.2 |      |      |      |      |      |      |      |      | 13.9 |      |
| Level of Service                  |      | B    |      |      |      |      |      |      |      |      | B    |      |
| Approach Delay (s)                |      | 11.2 |      |      | 0.0  |      |      | 0.0  |      |      | 13.9 |      |
| Approach LOS                      |      | B    |      |      | A    |      |      | A    |      |      | B    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.8  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.43  |                      |     |
| Actuated Cycle Length (s)         | 60.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 44.9% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 2088: L Street & 29th Street

6/1/2005



| Movement                          | EBL  | EBT  | EBR    | WBL  | WBT   | WBR                  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|-----------------------------------|------|------|--------|------|-------|----------------------|------|------|------|------|-------|------|
| Lane Configurations               |      |      | ↗      | ↘    | ↖     |                      |      |      |      |      | ↖↗↘   |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900   | 1900 | 1900  | 1900                 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)               |      |      | 4.0    | 4.0  | 4.0   |                      |      |      |      |      | 4.0   |      |
| Lane Util. Factor                 |      |      | 1.00   | 1.00 | 1.00  |                      |      |      |      |      | 0.91  |      |
| Fr <sub>t</sub>                   |      |      | 0.86   | 1.00 | 1.00  |                      |      |      |      |      | 0.99  |      |
| Fl <sub>t</sub> Protected         |      |      | 1.00   | 0.95 | 1.00  |                      |      |      |      |      | 1.00  |      |
| Satd. Flow (prot)                 |      |      | 1450   | 1770 | 1863  |                      |      |      |      |      | 4857  |      |
| Fl <sub>t</sub> Permitted         |      |      | 1.00   | 0.95 | 1.00  |                      |      |      |      |      | 1.00  |      |
| Satd. Flow (perm)                 |      |      | 1450   | 1770 | 1863  |                      |      |      |      |      | 4857  |      |
| Volume (vph)                      | 0    | 0    | 384    | 156  | 583   | 0                    | 0    | 0    | 0    | 0    | 1116  | 97   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00   | 1.00 | 1.00  | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 384    | 156  | 583   | 0                    | 0    | 0    | 0    | 0    | 1116  | 97   |
| RTOR Reduction (vph)              | 0    | 0    | 9      | 9    | 0     | 0                    | 0    | 0    | 0    | 0    | 13    | 0    |
| Lane Group Flow (vph)             | 0    | 0    | 375    | 147  | 583   | 0                    | 0    | 0    | 0    | 0    | 1201  | 0    |
| Parking (#/hr)                    |      |      | 0      |      |       |                      |      |      |      |      | 0     | 0    |
| Turn Type                         |      |      | custom | Perm |       |                      |      |      |      |      |       |      |
| Protected Phases                  |      |      |        |      | 8     |                      |      |      |      |      | 6     |      |
| Permitted Phases                  |      |      | 4      | 8    |       |                      |      |      |      |      |       |      |
| Actuated Green, G (s)             |      |      | 43.0   | 43.0 | 43.0  |                      |      |      |      |      | 31.0  |      |
| Effective Green, g (s)            |      |      | 42.0   | 42.0 | 42.0  |                      |      |      |      |      | 30.0  |      |
| Actuated g/C Ratio                |      |      | 0.52   | 0.52 | 0.52  |                      |      |      |      |      | 0.38  |      |
| Clearance Time (s)                |      |      | 3.0    | 3.0  | 3.0   |                      |      |      |      |      | 3.0   |      |
| Lane Grp Cap (vph)                |      |      | 761    | 929  | 978   |                      |      |      |      |      | 1821  |      |
| v/s Ratio Prot                    |      |      |        |      | c0.31 |                      |      |      |      |      | c0.25 |      |
| v/s Ratio Perm                    |      |      | 0.26   | 0.08 |       |                      |      |      |      |      |       |      |
| v/c Ratio                         |      |      | 0.49   | 0.16 | 0.60  |                      |      |      |      |      | 0.66  |      |
| Uniform Delay, d1                 |      |      | 12.2   | 9.8  | 13.1  |                      |      |      |      |      | 20.8  |      |
| Progression Factor                |      |      | 0.53   | 0.54 | 0.55  |                      |      |      |      |      | 0.68  |      |
| Incremental Delay, d2             |      |      | 2.0    | 0.4  | 2.6   |                      |      |      |      |      | 1.7   |      |
| Delay (s)                         |      |      | 8.4    | 5.7  | 9.8   |                      |      |      |      |      | 15.9  |      |
| Level of Service                  |      |      | A      | A    | A     |                      |      |      |      |      | B     |      |
| Approach Delay (s)                |      | 8.4  |        |      | 8.9   |                      | 0.0  |      |      |      | 15.9  |      |
| Approach LOS                      |      | A    |        |      | A     |                      | A    |      |      |      | B     |      |
| <b>Intersection Summary</b>       |      |      |        |      |       |                      |      |      |      |      |       |      |
| HCM Average Control Delay         |      |      | 12.5   |      |       | HCM Level of Service |      |      |      |      | B     |      |
| HCM Volume to Capacity ratio      |      |      | 0.62   |      |       |                      |      |      |      |      |       |      |
| Actuated Cycle Length (s)         |      |      | 80.0   |      |       | Sum of lost time (s) |      |      |      | 8.0  |       |      |
| Intersection Capacity Utilization |      |      | 66.1%  |      |       | ICU Level of Service |      |      |      |      | C     |      |
| Analysis Period (min)             |      |      | 15     |      |       |                      |      |      |      |      |       |      |
| c Critical Lane Group             |      |      |        |      |       |                      |      |      |      |      |       |      |



# HCM Signalized Intersection Capacity Analysis

2239: L Street & Alhambra

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      |      | ↕    |      |      | ↕    |      |      | ↕    | ↗    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      |      | 4.0  |      |      | 4.0  | 4.0  |
| Lane Util. Factor      |      |      |      |      | 1.00 |      |      | 1.00 |      |      | 1.00 | 1.00 |
| Frt                    |      |      |      |      | 0.99 |      |      | 0.96 |      |      | 1.00 | 0.85 |
| Flt Protected          |      |      |      |      | 1.00 |      |      | 1.00 |      |      | 0.99 | 1.00 |
| Satd. Flow (prot)      |      |      |      |      | 1645 |      |      | 1595 |      |      | 1851 | 1425 |
| Flt Permitted          |      |      |      |      | 1.00 |      |      | 0.91 |      |      | 0.85 | 1.00 |
| Satd. Flow (perm)      |      |      |      |      | 1645 |      |      | 1455 |      |      | 1588 | 1425 |
| Volume (vph)           | 0    | 0    | 0    | 12   | 120  | 16   | 73   | 425  | 240  | 71   | 478  | 338  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 12   | 120  | 16   | 73   | 425  | 240  | 71   | 478  | 338  |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 6    | 0    | 0    | 22   | 0    | 0    | 0    | 101  |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 142  | 0    | 0    | 716  | 0    | 0    | 549  | 237  |
| Parking (#/hr)         |      |      |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Turn Type              |      |      |      | Perm |      | Perm |      | Perm |      | Perm |      | Perm |
| Protected Phases       |      |      |      |      | 8    |      |      | 2    |      |      | 6    |      |
| Permitted Phases       |      |      |      | 8    |      | 2    |      |      | 6    |      |      | 6    |
| Actuated Green, G (s)  |      |      |      |      | 17.0 |      |      | 57.0 |      |      | 57.0 | 57.0 |
| Effective Green, g (s) |      |      |      |      | 16.0 |      |      | 56.0 |      |      | 56.0 | 56.0 |
| Actuated g/C Ratio     |      |      |      |      | 0.20 |      |      | 0.70 |      |      | 0.70 | 0.70 |
| Clearance Time (s)     |      |      |      |      | 3.0  |      |      | 3.0  |      |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |      |      |      |      | 329  |      |      | 1019 |      |      | 1112 | 998  |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      |      |      | 0.09 |      |      | 0.49 |      |      | 0.35 | 0.17 |
| v/c Ratio              |      |      |      |      | 0.43 |      |      | 0.70 |      |      | 0.49 | 0.24 |
| Uniform Delay, d1      |      |      |      |      | 28.0 |      |      | 7.1  |      |      | 5.5  | 4.3  |
| Progression Factor     |      |      |      |      | 1.00 |      |      | 0.59 |      |      | 1.53 | 4.32 |
| Incremental Delay, d2  |      |      |      |      | 4.1  |      |      | 2.0  |      |      | 1.4  | 0.5  |
| Delay (s)              |      |      |      |      | 32.1 |      |      | 6.1  |      |      | 9.8  | 19.2 |
| Level of Service       |      |      |      |      | C    |      |      | A    |      |      | A    | B    |
| Approach Delay (s)     |      | 0.0  |      |      | 32.1 |      |      | 6.1  |      |      | 13.4 |      |
| Approach LOS           |      | A    |      |      | C    |      |      | A    |      |      | B    |      |

## Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.9  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.64  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 88.1% | ICU Level of Service | E   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

# HCM Signalized Intersection Capacity Analysis

3426: L Street & 19th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↔    |      |      | ↔     |      |      |      |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      |      | 4.0   |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00 |      |      | 1.00  |      |      |      |      |      | 0.95 |      |
| Frt                    |      | 0.97 |      |      | 1.00  |      |      |      |      |      | 0.99 |      |
| Flt Protected          |      | 1.00 |      |      | 1.00  |      |      |      |      |      | 0.97 |      |
| Satd. Flow (prot)      |      | 1618 |      |      | 1672  |      |      |      |      |      | 3237 |      |
| Flt Permitted          |      | 1.00 |      |      | 0.99  |      |      |      |      |      | 0.97 |      |
| Satd. Flow (perm)      |      | 1618 |      |      | 1655  |      |      |      |      |      | 3237 |      |
| Volume (vph)           | 0    | 75   | 26   | 22   | 402   | 0    | 0    | 0    | 0    | 317  | 249  | 51   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 75   | 26   | 22   | 402   | 0    | 0    | 0    | 0    | 317  | 249  | 51   |
| RTOR Reduction (vph)   | 0    | 13   | 0    | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 11   | 0    |
| Lane Group Flow (vph)  | 0    | 88   | 0    | 0    | 424   | 0    | 0    | 0    | 0    | 0    | 606  | 0    |
| Parking (#/hr)         |      | 0    | 0    | 0    | 0     |      |      |      |      | 0    | 0    | 0    |
| Turn Type              |      |      |      | Perm |       |      |      |      |      |      | Perm |      |
| Protected Phases       |      | 2    |      |      | 6     |      |      |      |      |      | 4    |      |
| Permitted Phases       |      |      |      | 6    |       | 6    |      |      |      | 4    |      | 4    |
| Actuated Green, G (s)  |      | 31.0 |      |      | 31.0  |      |      |      |      |      | 23.0 |      |
| Effective Green, g (s) |      | 30.0 |      |      | 30.0  |      |      |      |      |      | 22.0 |      |
| Actuated g/C Ratio     |      | 0.50 |      |      | 0.50  |      |      |      |      |      | 0.37 |      |
| Clearance Time (s)     |      | 3.0  |      |      | 3.0   |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 809  |      |      | 828   |      |      |      |      |      | 1187 |      |
| v/s Ratio Prot         |      | 0.05 |      |      |       |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      |      |      | c0.26 |      |      |      |      |      | 0.19 |      |
| v/c Ratio              |      | 0.11 |      |      | 0.51  |      |      |      |      |      | 0.51 |      |
| Uniform Delay, d1      |      | 7.9  |      |      | 10.1  |      |      |      |      |      | 14.8 |      |
| Progression Factor     |      | 1.00 |      |      | 0.51  |      |      |      |      |      | 0.78 |      |
| Incremental Delay, d2  |      | 0.3  |      |      | 1.6   |      |      |      |      |      | 1.4  |      |
| Delay (s)              |      | 8.2  |      |      | 6.7   |      |      |      |      |      | 12.9 |      |
| Level of Service       |      | A    |      |      | A     |      |      |      |      |      | B    |      |
| Approach Delay (s)     |      | 8.2  |      |      | 6.7   |      |      | 0.0  |      |      | 12.9 |      |
| Approach LOS           |      | A    |      |      | A     |      |      | A    |      |      | B    |      |

## Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.2  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.51  |                      |     |
| Actuated Cycle Length (s)         | 60.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 53.4% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

# HCM Signalized Intersection Capacity Analysis

3427: L Street & 26th Street

6/1/2005



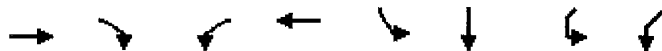
| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      |      | 4.0  |      |      | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00 |      |      | 1.00 |      |      | 1.00 |      |      | 1.00 |      |
| Frt                    |      | 1.00 |      |      | 0.99 |      |      | 1.00 |      |      | 0.95 |      |
| Flt Protected          |      | 1.00 |      |      | 1.00 |      |      | 0.98 |      |      | 0.99 |      |
| Satd. Flow (prot)      |      | 1676 |      |      | 1652 |      |      | 1649 |      |      | 1585 |      |
| Flt Permitted          |      | 1.00 |      |      | 0.99 |      |      | 0.93 |      |      | 0.97 |      |
| Satd. Flow (perm)      |      | 1675 |      |      | 1632 |      |      | 1555 |      |      | 1554 |      |
| Volume (vph)           | 1    | 377  | 1    | 14   | 345  | 37   | 19   | 37   | 0    | 12   | 40   | 28   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 1    | 377  | 1    | 14   | 345  | 37   | 19   | 37   | 0    | 12   | 40   | 28   |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 6    | 0    | 0    | 0    | 0    | 0    | 18   | 0    |
| Lane Group Flow (vph)  | 0    | 379  | 0    | 0    | 390  | 0    | 0    | 56   | 0    | 0    | 62   | 0    |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      |      | Perm |      |      | Perm |      |      | Perm |      |      |
| Protected Phases       |      | 4    |      |      | 8    |      |      | 2    |      |      | 6    |      |
| Permitted Phases       | 4    |      |      | 8    |      |      | 2    |      |      | 6    |      |      |
| Actuated Green, G (s)  |      | 32.0 |      |      | 32.0 |      |      | 22.0 |      |      | 22.0 |      |
| Effective Green, g (s) |      | 31.0 |      |      | 31.0 |      |      | 21.0 |      |      | 21.0 |      |
| Actuated g/C Ratio     |      | 0.52 |      |      | 0.52 |      |      | 0.35 |      |      | 0.35 |      |
| Clearance Time (s)     |      | 3.0  |      |      | 3.0  |      |      | 3.0  |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 865  |      |      | 843  |      |      | 544  |      |      | 544  |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      | 0.23 |      |      | 0.24 |      |      | 0.04 |      |      | 0.04 |      |
| v/c Ratio              |      | 0.44 |      |      | 0.46 |      |      | 0.10 |      |      | 0.11 |      |
| Uniform Delay, d1      |      | 9.1  |      |      | 9.2  |      |      | 13.1 |      |      | 13.2 |      |
| Progression Factor     |      | 0.69 |      |      | 1.00 |      |      | 0.79 |      |      | 1.00 |      |
| Incremental Delay, d2  |      | 1.2  |      |      | 1.8  |      |      | 0.4  |      |      | 0.4  |      |
| Delay (s)              |      | 7.4  |      |      | 11.0 |      |      | 10.7 |      |      | 13.6 |      |
| Level of Service       |      | A    |      |      | B    |      |      | B    |      |      | B    |      |
| Approach Delay (s)     |      | 7.4  |      |      | 11.0 |      |      | 10.7 |      |      | 13.6 |      |
| Approach LOS           |      | A    |      |      | B    |      |      | B    |      |      | B    |      |

## Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 9.7   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.32  |                      |     |
| Actuated Cycle Length (s)         | 60.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 43.6% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3428: J Street & 29th St off ramp

6/1/2005



| Movement               | EBT   | EBR  | WBL   | WBT   | SBL   | SBT   | SWL2  | SWL   |
|------------------------|-------|------|-------|-------|-------|-------|-------|-------|
| Lane Configurations    | ↑↑    | ↑    |       | ↑     |       | ↑↑↑   |       | ↑↑    |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  |
| Total Lost time (s)    | 4.0   | 4.0  |       | 4.0   |       | 4.0   |       | 4.0   |
| Lane Util. Factor      | 0.95  | 1.00 |       | 1.00  |       | 0.91  |       | 0.97  |
| Frt                    | 1.00  | 0.85 |       | 1.00  |       | 1.00  |       | 1.00  |
| Flt Protected          | 1.00  | 1.00 |       | 0.95  |       | 0.99  |       | 0.95  |
| Satd. Flow (prot)      | 3539  | 1425 |       | 1770  |       | 4888  |       | 3433  |
| Flt Permitted          | 1.00  | 1.00 |       | 0.95  |       | 0.99  |       | 0.95  |
| Satd. Flow (perm)      | 3539  | 1425 |       | 1770  |       | 4888  |       | 3433  |
| Volume (vph)           | 865   | 311  | 122   | 0     | 34    | 265   | 421   | 667   |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)        | 865   | 311  | 122   | 0     | 34    | 265   | 421   | 667   |
| RTOR Reduction (vph)   | 0     | 70   | 0     | 0     | 0     | 0     | 0     | 0     |
| Lane Group Flow (vph)  | 865   | 241  | 0     | 122   | 0     | 299   | 0     | 1088  |
| Parking (#/hr)         |       | 0    |       |       |       | 0     |       |       |
| Turn Type              |       | Perm | Split |       | Split |       | Split |       |
| Protected Phases       | 4     |      | 8     | 8     | 6     | 6     | 2     | 2     |
| Permitted Phases       |       | 4    |       |       |       |       |       |       |
| Actuated Green, G (s)  | 23.0  | 23.0 |       | 8.0   |       | 7.0   |       | 30.0  |
| Effective Green, g (s) | 22.0  | 22.0 |       | 7.0   |       | 6.0   |       | 29.0  |
| Actuated g/C Ratio     | 0.28  | 0.28 |       | 0.09  |       | 0.08  |       | 0.36  |
| Clearance Time (s)     | 3.0   | 3.0  |       | 3.0   |       | 3.0   |       | 3.0   |
| Lane Grp Cap (vph)     | 973   | 392  |       | 155   |       | 367   |       | 1244  |
| v/s Ratio Prot         | c0.24 |      |       | c0.07 |       | c0.06 |       | c0.32 |
| v/s Ratio Perm         |       | 0.17 |       |       |       |       |       |       |
| v/c Ratio              | 0.89  | 0.62 |       | 0.79  |       | 0.81  |       | 0.87  |
| Uniform Delay, d1      | 27.8  | 25.3 |       | 35.8  |       | 36.5  |       | 23.8  |
| Progression Factor     | 0.62  | 0.45 |       | 0.51  |       | 1.00  |       | 1.00  |
| Incremental Delay, d2  | 11.1  | 6.4  |       | 28.1  |       | 17.8  |       | 8.7   |
| Delay (s)              | 28.3  | 17.7 |       | 46.4  |       | 54.2  |       | 32.5  |
| Level of Service       | C     | B    |       | D     |       | D     |       | C     |
| Approach Delay (s)     | 25.5  |      |       | 46.4  |       | 54.2  |       | 32.5  |
| Approach LOS           | C     |      |       | D     |       | D     |       | C     |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 32.5  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.86  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 16.0 |
| Intersection Capacity Utilization | 80.9% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3429: J Street & Alhambra

6/1/2005



| Movement               | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR   |
|------------------------|-------|-------|------|-------|-------|------|------|------|------|------|------|-------|
| Lane Configurations    |       | ↔     |      | ↖     | ↗     | ↗    |      | ↔    |      |      | ↔    |       |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  |
| Total Lost time (s)    |       | 4.0   |      | 4.0   | 4.0   | 4.0  |      | 4.0  |      |      | 4.0  |       |
| Lane Util. Factor      |       | 0.95  |      | 0.95  | 0.95  | 1.00 |      | 0.95 |      |      | 0.95 |       |
| Fr't                   |       | 0.98  |      | 1.00  | 1.00  | 0.85 |      | 0.98 |      |      | 1.00 |       |
| Flt Protected          |       | 0.99  |      | 0.95  | 0.98  | 1.00 |      | 1.00 |      |      | 1.00 |       |
| Satd. Flow (prot)      |       | 3268  |      | 1681  | 1735  | 1425 |      | 3280 |      |      | 3354 |       |
| Flt Permitted          |       | 0.99  |      | 0.95  | 0.98  | 1.00 |      | 1.00 |      |      | 0.93 |       |
| Satd. Flow (perm)      |       | 3268  |      | 1681  | 1735  | 1425 |      | 3280 |      |      | 3134 |       |
| Volume (vph)           | 152   | 1102  | 228  | 482   | 216   | 104  | 0    | 253  | 49   | 17   | 330  | 0     |
| Peak-hour factor, PHF  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  |
| Adj. Flow (vph)        | 152   | 1102  | 228  | 482   | 216   | 104  | 0    | 253  | 49   | 17   | 330  | 0     |
| RTOR Reduction (vph)   | 0     | 19    | 0    | 0     | 0     | 83   | 0    | 20   | 0    | 0    | 0    | 0     |
| Lane Group Flow (vph)  | 0     | 1463  | 0    | 340   | 358   | 21   | 0    | 282  | 0    | 0    | 347  | 0     |
| Parking (#/hr)         |       | 0     | 0    |       |       | 0    |      | 0    | 0    |      | 0    |       |
| Turn Type              | Split |       |      | Split |       |      | Perm | Perm |      | Perm |      |       |
| Protected Phases       | 4     | 4     |      | 8     | 8     |      |      |      | 2    |      |      | 6     |
| Permitted Phases       |       |       |      |       |       |      | 8    | 2    |      |      | 6    |       |
| Actuated Green, G (s)  |       | 36.0  |      | 17.0  | 17.0  | 17.0 |      |      | 18.0 |      |      | 18.0  |
| Effective Green, g (s) |       | 35.0  |      | 16.0  | 16.0  | 16.0 |      |      | 17.0 |      |      | 17.0  |
| Actuated g/C Ratio     |       | 0.44  |      | 0.20  | 0.20  | 0.20 |      |      | 0.21 |      |      | 0.21  |
| Clearance Time (s)     |       | 3.0   |      | 3.0   | 3.0   | 3.0  |      |      | 3.0  |      |      | 3.0   |
| Lane Grp Cap (vph)     |       | 1430  |      | 336   | 347   | 285  |      |      | 697  |      |      | 666   |
| v/s Ratio Prot         |       | c0.45 |      | 0.20  | c0.21 |      |      |      | 0.09 |      |      |       |
| v/s Ratio Perm         |       |       |      |       |       | 0.01 |      |      |      |      |      | c0.11 |
| v/c Ratio              |       | 1.02  |      | 1.01  | 1.03  | 0.07 |      |      | 0.41 |      |      | 0.52  |
| Uniform Delay, d1      |       | 22.5  |      | 32.0  | 32.0  | 26.0 |      |      | 27.1 |      |      | 27.9  |
| Progression Factor     |       | 0.39  |      | 1.00  | 1.00  | 1.00 |      |      | 0.40 |      |      | 1.00  |
| Incremental Delay, d2  |       | 27.8  |      | 52.1  | 56.7  | 0.5  |      |      | 1.6  |      |      | 2.9   |
| Delay (s)              |       | 36.6  |      | 84.1  | 88.7  | 26.5 |      |      | 12.5 |      |      | 30.8  |
| Level of Service       |       | D     |      | F     | F     | C    |      |      | B    |      |      | C     |
| Approach Delay (s)     |       | 36.6  |      |       | 78.7  |      |      |      | 12.5 |      |      | 30.8  |
| Approach LOS           |       | D     |      |       | E     |      |      |      | B    |      |      | C     |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 44.9  | HCM Level of Service | D    |
| HCM Volume to Capacity ratio      | 0.90  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 92.7% | ICU Level of Service | F    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
3435: N Street & 29th Street

6/1/2005



| Movement               | EBT   | EBR  | EBR2 | WBL2  | WBL   | WBT   | SBL2 | SBL   | SBT  | SBR  |
|------------------------|-------|------|------|-------|-------|-------|------|-------|------|------|
| Lane Configurations    | ↔     | ↔    |      |       | ↔     | ↔     |      | ↔     | ↔    |      |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900  | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    | 4.0   | 4.0  |      |       | 4.0   | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor      | 0.95  | 0.95 |      |       | 0.95  | 0.95  |      | 0.97  | 0.95 |      |
| Fr't                   | 0.95  | 0.85 |      |       | 1.00  | 1.00  |      | 1.00  | 1.00 |      |
| Flt Protected          | 1.00  | 1.00 |      |       | 0.95  | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)      | 1515  | 1354 |      |       | 1681  | 1770  |      | 3433  | 3350 |      |
| Flt Permitted          | 1.00  | 1.00 |      |       | 0.95  | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)      | 1515  | 1354 |      |       | 1681  | 1770  |      | 3433  | 3350 |      |
| Volume (vph)           | 77    | 93   | 56   | 148   | 110   | 712   | 82   | 980   | 391  | 10   |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 77    | 93   | 56   | 148   | 110   | 712   | 82   | 980   | 391  | 10   |
| RTOR Reduction (vph)   | 0     | 45   | 0    | 0     | 0     | 0     | 0    | 0     | 2    | 0    |
| Lane Group Flow (vph)  | 114   | 67   | 0    | 0     | 258   | 712   | 0    | 1062  | 399  | 0    |
| Parking (#/hr)         | 0     | 0    | 0    |       |       |       |      |       | 0    |      |
| Turn Type              |       | Prot |      | Split | Split |       | Perm | Perm  |      |      |
| Protected Phases       | 4     | 4    |      | 8     | 8     | 8     |      |       | 6    |      |
| Permitted Phases       |       |      |      |       |       |       | 6    | 6     |      |      |
| Actuated Green, G (s)  | 17.0  | 17.0 |      |       | 30.0  | 30.0  |      | 24.0  | 24.0 |      |
| Effective Green, g (s) | 16.0  | 16.0 |      |       | 29.0  | 29.0  |      | 23.0  | 23.0 |      |
| Actuated g/C Ratio     | 0.20  | 0.20 |      |       | 0.36  | 0.36  |      | 0.29  | 0.29 |      |
| Clearance Time (s)     | 3.0   | 3.0  |      |       | 3.0   | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     | 303   | 271  |      |       | 609   | 642   |      | 987   | 963  |      |
| v/s Ratio Prot         | c0.08 | 0.05 |      |       | 0.15  | c0.40 |      |       | 0.12 |      |
| v/s Ratio Perm         |       |      |      |       |       |       |      | c0.31 |      |      |
| v/c Ratio              | 0.38  | 0.25 |      |       | 0.42  | 1.11  |      | 1.08  | 0.41 |      |
| Uniform Delay, d1      | 27.7  | 26.9 |      |       | 19.2  | 25.5  |      | 28.5  | 23.1 |      |
| Progression Factor     | 0.85  | 0.82 |      |       | 0.81  | 0.83  |      | 0.85  | 0.81 |      |
| Incremental Delay, d2  | 3.1   | 1.9  |      |       | 1.1   | 60.8  |      | 48.7  | 1.0  |      |
| Delay (s)              | 26.7  | 24.0 |      |       | 16.6  | 81.9  |      | 72.9  | 19.8 |      |
| Level of Service       | C     | C    |      |       | B     | F     |      | E     | B    |      |
| Approach Delay (s)     | 25.4  |      |      |       |       | 64.6  |      |       | 58.3 |      |
| Approach LOS           | C     |      |      |       |       | E     |      |       | E    |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 57.8  | HCM Level of Service | E    |
| HCM Volume to Capacity ratio      | 0.93  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 84.7% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
3436: Capitol & Alhambra

6/1/2005



| Movement                  | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|---------------------------|-------|-------|------|-------|-------|------|------|-------|------|------|------|------|
| Lane Configurations       |       | ↕↕    |      |       | ↕↕    |      | ↖    | ↗     | ↗    | ↖    | ↗    | ↖    |
| Ideal Flow (vphpl)        | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |       | 4.0   |      |       | 4.0   |      | 4.0  | 4.0   | 4.0  | 4.0  | 4.0  | 4.0  |
| Lane Util. Factor         |       | 0.95  |      |       | 0.95  |      | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Fr <sub>t</sub>           |       | 0.98  |      |       | 0.98  |      | 1.00 | 1.00  | 0.85 | 1.00 | 1.00 | 0.85 |
| Fl <sub>t</sub> Protected |       | 0.99  |      |       | 1.00  |      | 0.95 | 1.00  | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot)         |       | 3267  |      |       | 3293  |      | 1770 | 1676  | 1425 | 1770 | 1676 | 1425 |
| Fl <sub>t</sub> Permitted |       | 0.99  |      |       | 1.00  |      | 0.39 | 1.00  | 1.00 | 0.19 | 1.00 | 1.00 |
| Satd. Flow (perm)         |       | 3267  |      |       | 3293  |      | 721  | 1676  | 1425 | 360  | 1676 | 1425 |
| Volume (vph)              | 93    | 294   | 53   | 29    | 764   | 115  | 51   | 570   | 102  | 100  | 381  | 44   |
| Peak-hour factor, PHF     | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 93    | 294   | 53   | 29    | 764   | 115  | 51   | 570   | 102  | 100  | 381  | 44   |
| RTOR Reduction (vph)      | 0     | 14    | 0    | 0     | 14    | 0    | 0    | 0     | 40   | 0    | 0    | 26   |
| Lane Group Flow (vph)     | 0     | 426   | 0    | 0     | 894   | 0    | 51   | 570   | 62   | 100  | 381  | 18   |
| Parking (#/hr)            |       | 0     | 0    |       | 0     | 0    |      | 0     | 0    |      | 0    | 0    |
| Turn Type                 | Split |       |      | Split |       |      | Perm |       | Perm | Perm |      | Perm |
| Protected Phases          | 4     | 4     |      | 8     | 8     |      |      | 2     |      |      |      | 6    |
| Permitted Phases          |       |       |      |       |       |      | 2    |       | 2    | 6    |      | 6    |
| Actuated Green, G (s)     |       | 13.0  |      |       | 25.0  |      | 33.0 | 33.0  | 33.0 | 33.0 | 33.0 | 33.0 |
| Effective Green, g (s)    |       | 12.0  |      |       | 24.0  |      | 32.0 | 32.0  | 32.0 | 32.0 | 32.0 | 32.0 |
| Actuated g/C Ratio        |       | 0.15  |      |       | 0.30  |      | 0.40 | 0.40  | 0.40 | 0.40 | 0.40 | 0.40 |
| Clearance Time (s)        |       | 3.0   |      |       | 3.0   |      | 3.0  | 3.0   | 3.0  | 3.0  | 3.0  | 3.0  |
| Lane Grp Cap (vph)        |       | 490   |      |       | 988   |      | 288  | 670   | 570  | 144  | 670  | 570  |
| v/s Ratio Prot            |       | c0.13 |      |       | c0.27 |      |      | c0.34 |      |      | 0.23 |      |
| v/s Ratio Perm            |       |       |      |       |       |      | 0.07 |       | 0.04 | 0.28 |      | 0.01 |
| v/c Ratio                 |       | 0.87  |      |       | 0.90  |      | 0.18 | 0.85  | 0.11 | 0.69 | 0.57 | 0.03 |
| Uniform Delay, d1         |       | 33.2  |      |       | 26.9  |      | 15.5 | 21.8  | 15.1 | 19.9 | 18.6 | 14.6 |
| Progression Factor        |       | 0.96  |      |       | 1.00  |      | 0.68 | 0.64  | 0.49 | 0.62 | 0.58 | 0.52 |
| Incremental Delay, d2     |       | 18.1  |      |       | 13.2  |      | 0.7  | 6.9   | 0.2  | 22.1 | 3.1  | 0.1  |
| Delay (s)                 |       | 50.1  |      |       | 40.1  |      | 11.1 | 20.9  | 7.6  | 34.5 | 13.9 | 7.7  |
| Level of Service          |       | D     |      |       | D     |      | B    | C     | A    | C    | B    | A    |
| Approach Delay (s)        |       | 50.1  |      |       | 40.1  |      |      | 18.3  |      |      | 17.3 |      |
| Approach LOS              |       | D     |      |       | D     |      |      | B     |      |      | B    |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 31.1  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.87  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 87.0% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3437: P Street & P St off ramp

6/1/2005



| Movement               | EBT  | EBR  | WBL  | WBT   | SBL   | SBT   | SBR  | SWL2  | SWL  | SWR  |
|------------------------|------|------|------|-------|-------|-------|------|-------|------|------|
| Lane Configurations    | ↑    | ↗    | ↖    | ↑     |       | ↑↑↑   |      | ↖     | ↗↘   |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900  | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    | 4.0  | 4.0  | 4.0  | 4.0   |       | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor      | 1.00 | 1.00 | 1.00 | 1.00  |       | 0.91  |      | 0.91  | 0.91 |      |
| Frt                    | 1.00 | 0.85 | 1.00 | 1.00  |       | 0.97  |      | 1.00  | 0.96 |      |
| Flt Protected          | 1.00 | 1.00 | 0.95 | 1.00  |       | 0.99  |      | 0.95  | 0.96 |      |
| Satd. Flow (prot)      | 1676 | 1425 | 1593 | 1676  |       | 4756  |      | 1610  | 3138 |      |
| Flt Permitted          | 1.00 | 1.00 | 0.43 | 1.00  |       | 0.99  |      | 0.95  | 0.96 |      |
| Satd. Flow (perm)      | 1676 | 1425 | 722  | 1676  |       | 4756  |      | 1610  | 3138 |      |
| Volume (vph)           | 326  | 83   | 187  | 471   | 69    | 357   | 89   | 484   | 290  | 167  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 326  | 83   | 187  | 471   | 69    | 357   | 89   | 484   | 290  | 167  |
| RTOR Reduction (vph)   | 0    | 52   | 0    | 0     | 0     | 40    | 0    | 0     | 0    | 0    |
| Lane Group Flow (vph)  | 326  | 31   | 187  | 471   | 0     | 475   | 0    | 322   | 619  | 0    |
| Parking (#/hr)         | 0    | 0    | 0    | 0     | 0     | 0     | 0    | 0     | 0    | 0    |
| Turn Type              |      | Perm | Perm |       | Split |       |      | Split |      |      |
| Protected Phases       | 4    |      |      | 8     | 6     | 6     |      | 2     | 2    |      |
| Permitted Phases       |      | 4    | 8    |       |       |       |      |       |      |      |
| Actuated Green, G (s)  | 31.0 | 31.0 | 31.0 | 31.0  |       | 18.0  |      | 22.0  | 22.0 |      |
| Effective Green, g (s) | 30.0 | 30.0 | 30.0 | 30.0  |       | 17.0  |      | 21.0  | 21.0 |      |
| Actuated g/C Ratio     | 0.38 | 0.38 | 0.38 | 0.38  |       | 0.21  |      | 0.26  | 0.26 |      |
| Clearance Time (s)     | 3.0  | 3.0  | 3.0  | 3.0   |       | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     | 629  | 534  | 271  | 629   |       | 1011  |      | 423   | 824  |      |
| v/s Ratio Prot         | 0.19 |      |      | c0.28 |       | c0.10 |      | c0.20 | 0.20 |      |
| v/s Ratio Perm         |      | 0.02 | 0.26 |       |       |       |      |       |      |      |
| v/c Ratio              | 0.52 | 0.06 | 0.69 | 0.75  |       | 0.47  |      | 0.76  | 0.75 |      |
| Uniform Delay, d1      | 19.4 | 16.0 | 21.1 | 21.7  |       | 27.6  |      | 27.2  | 27.1 |      |
| Progression Factor     | 1.00 | 1.00 | 0.74 | 0.74  |       | 0.88  |      | 1.00  | 1.00 |      |
| Incremental Delay, d2  | 3.0  | 0.2  | 12.5 | 7.4   |       | 1.5   |      | 12.2  | 6.2  |      |
| Delay (s)              | 22.4 | 16.2 | 28.1 | 23.5  |       | 25.7  |      | 39.4  | 33.3 |      |
| Level of Service       | C    | B    | C    | C     |       | C     |      | D     | C    |      |
| Approach Delay (s)     | 21.2 |      |      | 24.8  |       | 25.7  |      |       | 35.4 |      |
| Approach LOS           | C    |      |      | C     |       | C     |      |       | D    |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 28.4  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.68  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 69.4% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |



HCM Signalized Intersection Capacity Analysis  
 3438: P Street & Alhambra

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|------|------|------|-------|------|------|-------|------|------|-------|------|
| Lane Configurations    |      | ↔    |      |      | ↔     | ↗    | ↖    | ↕     |      | ↖    | ↕     |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      | 4.0  |      |      | 4.0   | 4.0  | 4.0  | 4.0   |      | 4.0  | 4.0   |      |
| Lane Util. Factor      |      | 0.95 |      |      | 0.95  | 1.00 | 1.00 | 1.00  |      | 1.00 | 1.00  |      |
| Frt                    |      | 1.00 |      |      | 1.00  | 0.85 | 1.00 | 1.00  |      | 1.00 | 0.96  |      |
| Flt Protected          |      | 1.00 |      |      | 1.00  | 1.00 | 0.95 | 1.00  |      | 0.95 | 1.00  |      |
| Satd. Flow (prot)      |      | 3539 |      |      | 3526  | 1583 | 1770 | 1855  |      | 1770 | 1797  |      |
| Flt Permitted          |      | 1.00 |      |      | 0.80  | 1.00 | 0.95 | 1.00  |      | 0.95 | 1.00  |      |
| Satd. Flow (perm)      |      | 3539 |      |      | 2818  | 1583 | 1770 | 1855  |      | 1770 | 1797  |      |
| Volume (vph)           | 0    | 790  | 0    | 74   | 888   | 244  | 66   | 366   | 11   | 95   | 255   | 79   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 0    | 790  | 0    | 74   | 888   | 244  | 66   | 366   | 11   | 95   | 255   | 79   |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 0     | 134  | 0    | 1     | 0    | 0    | 14    | 0    |
| Lane Group Flow (vph)  | 0    | 790  | 0    | 0    | 962   | 110  | 66   | 376   | 0    | 95   | 320   | 0    |
| Turn Type              | Perm |      |      | Perm |       |      | Perm | Prot  | Prot |      |       |      |
| Protected Phases       |      | 4    |      |      | 8     |      | 5    | 2     |      | 1    | 6     |      |
| Permitted Phases       | 4    |      |      | 8    |       | 8    |      |       |      |      |       |      |
| Actuated Green, G (s)  |      | 37.0 |      |      | 37.0  | 37.0 | 8.0  | 25.0  |      | 9.0  | 26.0  |      |
| Effective Green, g (s) |      | 36.0 |      |      | 36.0  | 36.0 | 7.0  | 24.0  |      | 8.0  | 25.0  |      |
| Actuated g/C Ratio     |      | 0.45 |      |      | 0.45  | 0.45 | 0.09 | 0.30  |      | 0.10 | 0.31  |      |
| Clearance Time (s)     |      | 3.0  |      |      | 3.0   | 3.0  | 3.0  | 3.0   |      | 3.0  | 3.0   |      |
| Lane Grp Cap. (vph)    |      | 1593 |      |      | 1268  | 712  | 155  | 557   |      | 177  | 562   |      |
| v/s Ratio Prot         |      | 0.22 |      |      |       |      | 0.04 | c0.20 |      | 0.05 | c0.18 |      |
| v/s Ratio Perm         |      |      |      |      | c0.34 | 0.07 |      |       |      |      |       |      |
| v/c Ratio              |      | 0.50 |      |      | 0.76  | 0.15 | 0.43 | 0.67  |      | 0.54 | 0.57  |      |
| Uniform Delay, d1      |      | 15.6 |      |      | 18.4  | 13.0 | 34.6 | 24.6  |      | 34.2 | 23.0  |      |
| Progression Factor     |      | 0.36 |      |      | 1.00  | 1.00 | 1.00 | 1.00  |      | 0.79 | 0.97  |      |
| Incremental Delay, d2  |      | 0.7  |      |      | 4.3   | 0.5  | 8.3  | 6.4   |      | 8.5  | 3.1   |      |
| Delay (s)              |      | 6.4  |      |      | 22.7  | 13.5 | 42.9 | 31.0  |      | 35.6 | 25.4  |      |
| Level of Service       |      | A    |      |      | C     | B    | D    | C     |      | D    | C     |      |
| Approach Delay (s)     |      | 6.4  |      |      | 20.8  |      |      | 32.8  |      |      | 27.7  |      |
| Approach LOS           |      | A    |      |      | C     |      |      | C     |      |      | C     |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 19.7  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.72  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 87.1% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

3444: Q Street & 29th Street

6/1/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|-------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↕     |      | ↕    | ↕    |      |      |      |      |      | ↕↕↕  |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      |      |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00  |      |      |      |      |      |      |      |      | 0.91 |      |
| Frt                    |      | 0.98  |      |      |      |      |      |      |      |      | 0.96 |      |
| Flt Protected          |      | 1.00  |      |      |      |      |      |      |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 1825  |      |      |      |      |      |      |      |      | 4856 |      |
| Flt Permitted          |      | 1.00  |      |      |      |      |      |      |      |      | 1.00 |      |
| Satd. Flow (perm)      |      | 1825  |      |      |      |      |      |      |      |      | 4856 |      |
| Volume (vph)           | 0    | 227   | 40   | 0    | 0    | 0    | 0    | 0    | 0    | 35   | 795  | 340  |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 227   | 40   | 0    | 0    | 0    | 0    | 0    | 0    | 35   | 795  | 340  |
| RTOR Reduction (vph)   | 0    | 8     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 92   | 0    |
| Lane Group Flow (vph)  | 0    | 259   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1078 | 0    |
| Turn Type              |      |       |      | Perm |      |      |      |      |      | Perm |      |      |
| Protected Phases       |      | 4     |      |      | 8    |      |      |      |      |      |      | 6    |
| Permitted Phases       |      |       |      | 8    |      |      |      |      |      | 6    |      |      |
| Actuated Green, G (s)  |      | 35.0  |      |      |      |      |      |      |      |      |      | 39.0 |
| Effective Green, g (s) |      | 34.0  |      |      |      |      |      |      |      |      |      | 38.0 |
| Actuated g/C Ratio     |      | 0.42  |      |      |      |      |      |      |      |      |      | 0.48 |
| Clearance Time (s)     |      | 3.0   |      |      |      |      |      |      |      |      |      | 3.0  |
| Lane Grp Cap (vph)     |      | 776   |      |      |      |      |      |      |      |      |      | 2307 |
| v/s Ratio Prot         |      | c0.14 |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |       |      |      |      |      |      |      |      |      |      | 0.22 |
| v/c Ratio              |      | 0.33  |      |      |      |      |      |      |      |      |      | 0.47 |
| Uniform Delay, d1      |      | 15.4  |      |      |      |      |      |      |      |      |      | 14.2 |
| Progression Factor     |      | 1.00  |      |      |      |      |      |      |      |      |      | 0.52 |
| Incremental Delay, d2  |      | 1.2   |      |      |      |      |      |      |      |      |      | 0.6  |
| Delay (s)              |      | 16.6  |      |      |      |      |      |      |      |      |      | 8.0  |
| Level of Service       |      | B     |      |      |      |      |      |      |      |      |      | A    |
| Approach Delay (s)     |      | 16.6  |      |      | 0.0  |      |      | 0.0  |      |      |      | 8.0  |
| Approach LOS           |      | B     |      |      | A    |      |      | A    |      |      |      | A    |

## Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 9.6   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.40  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 44.7% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 3467: N Street & Alhambra

6/1/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|-------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations    |      | ↕     |      |      | ↕    |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      | 4.0  |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00  |      |      | 1.00 |      |      | 1.00  |      |      | 1.00 |      |
| Frt                    |      | 0.97  |      |      | 0.99 |      |      | 0.99  |      |      | 0.99 |      |
| Flt Protected          |      | 0.98  |      |      | 0.99 |      |      | 1.00  |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 1595  |      |      | 1640 |      |      | 1649  |      |      | 1662 |      |
| Flt Permitted          |      | 0.67  |      |      | 0.87 |      |      | 0.97  |      |      | 0.98 |      |
| Satd. Flow (perm)      |      | 1088  |      |      | 1448 |      |      | 1608  |      |      | 1637 |      |
| Volume (vph)           | 221  | 151   | 86   | 55   | 229  | 30   | 26   | 509   | 62   | 12   | 410  | 24   |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 221  | 151   | 86   | 55   | 229  | 30   | 26   | 509   | 62   | 12   | 410  | 24   |
| RTOR Reduction (vph)   | 0    | 11    | 0    | 0    | 5    | 0    | 0    | 5     | 0    | 0    | 2    | 0    |
| Lane Group Flow (vph)  | 0    | 448   | 0    | 0    | 309  | 0    | 0    | 592   | 0    | 0    | 444  | 0    |
| Parking (#/hr)         | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |       |      | Perm |      |      | Perm |       |      | Perm |      |      |
| Protected Phases       |      | 4     |      |      | 8    |      |      | 2     |      |      | 6    |      |
| Permitted Phases       | 4    |       |      | 8    |      |      | 2    |       |      | 6    |      |      |
| Actuated Green, G (s)  |      | 39.0  |      |      | 39.0 |      |      | 35.0  |      |      | 35.0 |      |
| Effective Green, g (s) |      | 38.0  |      |      | 38.0 |      |      | 34.0  |      |      | 34.0 |      |
| Actuated g/C Ratio     |      | 0.48  |      |      | 0.48 |      |      | 0.42  |      |      | 0.42 |      |
| Clearance Time (s)     |      | 3.0   |      |      | 3.0  |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 517   |      |      | 688  |      |      | 683   |      |      | 696  |      |
| v/s Ratio Prot         |      |       |      |      |      |      |      |       |      |      |      |      |
| v/s Ratio Perm         |      | c0.41 |      |      | 0.21 |      |      | c0.37 |      |      | 0.27 |      |
| v/c Ratio              |      | 0.87  |      |      | 0.45 |      |      | 0.87  |      |      | 0.64 |      |
| Uniform Delay, d1      |      | 18.7  |      |      | 14.0 |      |      | 20.9  |      |      | 18.1 |      |
| Progression Factor     |      | 0.87  |      |      | 1.00 |      |      | 0.44  |      |      | 0.66 |      |
| Incremental Delay, d2  |      | 16.5  |      |      | 2.1  |      |      | 12.3  |      |      | 3.5  |      |
| Delay (s)              |      | 32.8  |      |      | 16.1 |      |      | 21.4  |      |      | 15.5 |      |
| Level of Service       |      | C     |      |      | B    |      |      | C     |      |      | B    |      |
| Approach Delay (s)     |      | 32.8  |      |      | 16.1 |      |      | 21.4  |      |      | 15.5 |      |
| Approach LOS           |      | C     |      |      | B    |      |      | C     |      |      | B    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 21.9  | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 0.87  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 95.0% | ICU Level of Service | F   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
5802: K Street & 29th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑    | ↑    | ↖    | ↑     |      |      |      |      |      | ↑↑   | ↑    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  | 4.0  | 4.0   |      |      |      |      |      | 4.0  | 4.0  |
| Lane Util. Factor      |      | 1.00 | 1.00 | 1.00 | 1.00  |      |      |      |      |      | 0.95 | 1.00 |
| Frt                    |      | 1.00 | 0.85 | 1.00 | 1.00  |      |      |      |      |      | 1.00 | 0.85 |
| Flt Protected          |      | 1.00 | 1.00 | 0.95 | 1.00  |      |      |      |      |      | 0.99 | 1.00 |
| Satd. Flow (prot)      |      | 1863 | 1583 | 1770 | 1863  |      |      |      |      |      | 3508 | 1583 |
| Flt Permitted          |      | 1.00 | 1.00 | 0.67 | 1.00  |      |      |      |      |      | 0.99 | 1.00 |
| Satd. Flow (perm)      |      | 1863 | 1583 | 1252 | 1863  |      |      |      |      |      | 3508 | 1583 |
| Volume (vph)           | 0    | 133  | 230  | 198  | 586   | 0    | 0    | 0    | 0    | 150  | 686  | 442  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 133  | 230  | 198  | 586   | 0    | 0    | 0    | 0    | 150  | 686  | 442  |
| RTOR Reduction (vph)   | 0    | 0    | 51   | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 151  |
| Lane Group Flow (vph)  | 0    | 133  | 179  | 198  | 586   | 0    | 0    | 0    | 0    | 0    | 836  | 291  |
| Turn Type              |      |      | Perm | Perm |       |      |      |      |      |      | Perm | Perm |
| Protected Phases       |      | 4    |      |      | 8     |      |      |      |      |      |      | 6    |
| Permitted Phases       |      |      | 4    | 8    |       |      |      |      |      | 6    |      | 6    |
| Actuated Green, G (s)  |      | 42.0 | 42.0 | 42.0 | 42.0  |      |      |      |      |      | 32.0 | 32.0 |
| Effective Green, g (s) |      | 41.0 | 41.0 | 41.0 | 41.0  |      |      |      |      |      | 31.0 | 31.0 |
| Actuated g/C Ratio     |      | 0.51 | 0.51 | 0.51 | 0.51  |      |      |      |      |      | 0.39 | 0.39 |
| Clearance Time (s)     |      | 3.0  | 3.0  | 3.0  | 3.0   |      |      |      |      |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |      | 955  | 811  | 642  | 955   |      |      |      |      |      | 1359 | 613  |
| v/s Ratio Prot         |      | 0.07 |      |      | c0.31 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      | 0.11 | 0.16 |       |      |      |      |      |      | 0.24 | 0.18 |
| v/c Ratio              |      | 0.14 | 0.22 | 0.31 | 0.61  |      |      |      |      |      | 0.62 | 0.48 |
| Uniform Delay, d1      |      | 10.2 | 10.7 | 11.3 | 13.9  |      |      |      |      |      | 19.7 | 18.4 |
| Progression Factor     |      | 0.86 | 0.78 | 0.56 | 0.53  |      |      |      |      |      | 0.91 | 0.65 |
| Incremental Delay, d2  |      | 0.3  | 0.6  | 1.1  | 2.6   |      |      |      |      |      | 1.2  | 1.3  |
| Delay (s)              |      | 9.1  | 9.0  | 7.4  | 10.0  |      |      |      |      |      | 19.2 | 13.2 |
| Level of Service       |      | A    | A    | A    | A     |      |      |      |      |      | B    | B    |
| Approach Delay (s)     |      | 9.0  |      |      | 9.3   |      |      | 0.0  |      |      | 17.1 |      |
| Approach LOS           |      | A    |      |      | A     |      |      | A    |      |      | B    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 13.4  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.61  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 64.9% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 5848: J Street & 30th Street

6/1/2005



| Movement               | EBL2 | EBL  | EBT   | WBT  | WBR  | NBL2 | NBL  | NBT   | NBR  |
|------------------------|------|------|-------|------|------|------|------|-------|------|
| Lane Configurations    |      | ↔    | ↕     | ↔    |      |      | ↔    | ↕     | ↔    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0   | 4.0  |      |      | 4.0  | 4.0   |      |
| Lane Util. Factor      |      | 1.00 | 0.95  | 1.00 |      |      | 0.91 | 0.91  |      |
| Frt                    |      | 1.00 | 1.00  | 0.91 |      |      | 1.00 | 0.90  |      |
| Flt Protected          |      | 0.95 | 1.00  | 1.00 |      |      | 0.95 | 1.00  |      |
| Satd. Flow (prot)      |      | 1770 | 3362  | 1532 |      |      | 1610 | 3042  |      |
| Flt Permitted          |      | 0.95 | 1.00  | 1.00 |      |      | 0.95 | 1.00  |      |
| Satd. Flow (perm)      |      | 1770 | 3362  | 1532 |      |      | 1610 | 3042  |      |
| Volume (vph)           | 120  | 128  | 1042  | 82   | 145  | 40   | 244  | 210   | 454  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 120  | 128  | 1042  | 82   | 145  | 40   | 244  | 210   | 454  |
| RTOR Reduction (vph)   | 0    | 0    | 0     | 0    | 0    | 0    | 0    | 72    | 0    |
| Lane Group Flow (vph)  | 0    | 248  | 1042  | 227  | 0    | 0    | 284  | 593   | 0    |
| Parking (#/hr)         |      |      | 0     | 0    | 0    |      |      |       | 0    |
| Turn Type              | Prot | Prot |       |      |      | Perm | Perm |       |      |
| Protected Phases       | 7    | 7    | 4     | 8    |      |      |      | 2     |      |
| Permitted Phases       |      |      |       |      |      | 2    | 2    |       |      |
| Actuated Green, G (s)  |      | 22.0 | 48.0  | 23.0 |      |      | 26.0 | 26.0  |      |
| Effective Green, g (s) |      | 21.0 | 47.0  | 22.0 |      |      | 25.0 | 25.0  |      |
| Actuated g/C Ratio     |      | 0.26 | 0.59  | 0.28 |      |      | 0.31 | 0.31  |      |
| Clearance Time (s)     |      | 3.0  | 3.0   | 3.0  |      |      | 3.0  | 3.0   |      |
| Lane Grp Cap (vph)     |      | 465  | 1975  | 421  |      |      | 503  | 951   |      |
| v/s Ratio Prot         |      | 0.14 | c0.31 | 0.15 |      |      |      | c0.19 |      |
| v/s Ratio Perm         |      |      |       |      |      |      | 0.18 |       |      |
| v/c Ratio              |      | 0.53 | 0.53  | 0.54 |      |      | 0.56 | 0.62  |      |
| Uniform Delay, d1      |      | 25.3 | 9.9   | 24.7 |      |      | 23.0 | 23.5  |      |
| Progression Factor     |      | 0.99 | 0.77  | 1.07 |      |      | 0.42 | 0.31  |      |
| Incremental Delay, d2  |      | 1.9  | 0.5   | 1.3  |      |      | 3.9  | 2.7   |      |
| Delay (s)              |      | 27.0 | 8.0   | 27.6 |      |      | 13.6 | 10.0  |      |
| Level of Service       |      | C    | A     | C    |      |      | B    | B     |      |
| Approach Delay (s)     |      |      | 11.7  | 27.6 |      |      |      | 11.1  |      |
| Approach LOS           |      |      | B     | C    |      |      |      | B     |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 12.9  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.56  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 56.1% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 5849: L Street & 30th Street

6/1/2005



| Movement                          | EBL                 | EBT  | EBR   | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR                  |     |
|-----------------------------------|---------------------|------|-------|------|-------|------|------|-------|------|------|------|----------------------|-----|
| Lane Configurations               |                     |      |       |      | ↑↑    | ↑    | ↘    | ↑↑↑   |      |      |      |                      |     |
| Ideal Flow (vphpl)                | 1900                | 1900 | 1900  | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900                 |     |
| Total Lost time (s)               |                     |      |       |      | 4.0   | 4.0  | 4.0  | 4.0   |      |      |      |                      |     |
| Lane Util. Factor                 |                     |      |       |      | 0.95  | 1.00 | 0.86 | 0.86  |      |      |      |                      |     |
| Fr <sub>t</sub>                   |                     |      |       |      | 1.00  | 0.85 | 1.00 | 1.00  |      |      |      |                      |     |
| Fl <sub>t</sub> Protected         |                     |      |       |      | 1.00  | 1.00 | 0.95 | 1.00  |      |      |      |                      |     |
| Satd. Flow (prot)                 |                     |      |       |      | 3539  | 1425 | 1522 | 4646  |      |      |      |                      |     |
| Fl <sub>t</sub> Permitted         |                     |      |       |      | 1.00  | 1.00 | 0.95 | 1.00  |      |      |      |                      |     |
| Satd. Flow (perm)                 |                     |      |       |      | 3539  | 1425 | 1522 | 4646  |      |      |      |                      |     |
| Volume (vph)                      | 0                   | 0    | 0     | 0    | 439   | 75   | 288  | 1167  | 0    | 0    | 0    | 0                    |     |
| Peak-hour factor, PHF             | 1.00                | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00                 |     |
| Adj. Flow (vph)                   | 0                   | 0    | 0     | 0    | 439   | 75   | 288  | 1167  | 0    | 0    | 0    | 0                    |     |
| RTOR Reduction (vph)              | 0                   | 0    | 0     | 0    | 0     | 35   | 113  | 0     | 0    | 0    | 0    | 0                    |     |
| Lane Group Flow (vph)             | 0                   | 0    | 0     | 0    | 439   | 40   | 175  | 1167  | 0    | 0    | 0    | 0                    |     |
| Parking (#/hr)                    |                     |      |       |      |       | 0    |      | 0     |      |      |      |                      |     |
| Turn Type                         |                     |      |       |      |       | Perm | Perm |       |      |      |      |                      |     |
| Protected Phases                  |                     |      |       |      | 8     |      |      | 2     |      |      |      |                      |     |
| Permitted Phases                  |                     |      |       |      |       | 8    | 2    |       |      |      |      |                      |     |
| Actuated Green, G (s)             |                     |      |       |      | 31.0  | 31.0 | 43.0 | 43.0  |      |      |      |                      |     |
| Effective Green, g (s)            |                     |      |       |      | 30.0  | 30.0 | 42.0 | 42.0  |      |      |      |                      |     |
| Actuated g/C Ratio                |                     |      |       |      | 0.38  | 0.38 | 0.52 | 0.52  |      |      |      |                      |     |
| Clearance Time (s)                |                     |      |       |      | 3.0   | 3.0  | 3.0  | 3.0   |      |      |      |                      |     |
| Lane Grp Cap (vph)                |                     |      |       |      | 1327  | 534  | 799  | 2439  |      |      |      |                      |     |
| v/s Ratio Prot                    |                     |      |       |      | c0.12 |      |      | c0.25 |      |      |      |                      |     |
| v/s Ratio Perm                    |                     |      |       |      |       | 0.03 | 0.12 |       |      |      |      |                      |     |
| v/c Ratio                         |                     |      |       |      | 0.33  | 0.07 | 0.22 | 0.48  |      |      |      |                      |     |
| Uniform Delay, d <sub>1</sub>     |                     |      |       |      | 17.8  | 16.1 | 10.2 | 12.1  |      |      |      |                      |     |
| Progression Factor                |                     |      |       |      | 0.67  | 0.38 | 0.11 | 0.42  |      |      |      |                      |     |
| Incremental Delay, d <sub>2</sub> |                     |      |       |      | 0.6   | 0.3  | 0.5  | 0.5   |      |      |      |                      |     |
| Delay (s)                         |                     |      |       |      | 12.5  | 6.4  | 1.6  | 5.6   |      |      |      |                      |     |
| Level of Service                  |                     |      |       |      | B     | A    | A    | A     |      |      |      |                      |     |
| Approach Delay (s)                |                     | 0.0  |       |      | 11.6  |      |      | 4.8   |      |      | 0.0  |                      |     |
| Approach LOS                      |                     | A    |       |      | B     |      |      | A     |      |      | A    |                      |     |
| <b>Intersection Summary</b>       |                     |      |       |      |       |      |      |       |      |      |      |                      |     |
| HCM Average Control Delay         |                     |      | 6.6   |      |       |      |      |       |      |      |      | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      |                     |      | 0.42  |      |       |      |      |       |      |      |      |                      |     |
| Actuated Cycle Length (s)         |                     |      | 80.0  |      |       |      |      |       |      |      |      | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization |                     |      | 66.1% |      |       |      |      |       |      |      |      | ICU Level of Service | C   |
| Analysis Period (min)             |                     |      | 15    |      |       |      |      |       |      |      |      |                      |     |
| c                                 | Critical Lane Group |      |       |      |       |      |      |       |      |      |      |                      |     |

HCM Signalized Intersection Capacity Analysis  
5880: N Street & 30th Street

6/1/2005



| Movement                          | EBL   | EBT  | WBT                  | WBR  | NBL  | NBT  | NBR  | NEL2  | NEL   | NER  |
|-----------------------------------|-------|------|----------------------|------|------|------|------|-------|-------|------|
| Lane Configurations               | ↖     | ↑    | ↗                    |      |      | ↖↗   |      |       | ↖↗    |      |
| Ideal Flow (vphpl)                | 1900  | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900  | 1900 |
| Total Lost time (s)               | 4.0   | 4.0  | 4.0                  |      |      | 4.0  |      |       | 4.0   |      |
| Lane Util. Factor                 | 1.00  | 1.00 | 1.00                 |      |      | 0.91 |      |       | 0.97  |      |
| Fr't                              | 1.00  | 1.00 | 0.99                 |      |      | 0.99 |      |       | 0.99  |      |
| Flt Protected                     | 0.95  | 1.00 | 1.00                 |      |      | 0.99 |      |       | 0.96  |      |
| Satd. Flow (prot)                 | 1770  | 1863 | 1656                 |      |      | 4794 |      |       | 3408  |      |
| Flt Permitted                     | 0.34  | 1.00 | 1.00                 |      |      | 0.99 |      |       | 0.96  |      |
| Satd. Flow (perm)                 | 625   | 1863 | 1656                 |      |      | 4794 |      |       | 3408  |      |
| Volume (vph)                      | 76    | 73   | 240                  | 24   | 171  | 505  | 67   | 661   | 568   | 127  |
| Peak-hour factor, PHF             | 1.00  | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 |
| Adj. Flow (vph)                   | 76    | 73   | 240                  | 24   | 171  | 505  | 67   | 661   | 568   | 127  |
| RTOR Reduction (vph)              | 0     | 0    | 5                    | 0    | 0    | 14   | 0    | 0     | 0     | 0    |
| Lane Group Flow (vph)             | 76    | 73   | 259                  | 0    | 0    | 729  | 0    | 0     | 1356  | 0    |
| Parking (#/hr)                    |       |      | 0                    | 0    |      | 0    | 0    |       |       |      |
| Turn Type                         | Perm  |      |                      |      | Perm |      |      | Split |       |      |
| Protected Phases                  |       | 4    | 8                    |      |      | 2    |      | 6     | 6     |      |
| Permitted Phases                  | 4     |      |                      |      | 2    |      |      |       |       |      |
| Actuated Green, G (s)             | 17.0  | 17.0 | 17.0                 |      |      | 17.0 |      |       | 37.0  |      |
| Effective Green, g (s)            | 16.0  | 16.0 | 16.0                 |      |      | 16.0 |      |       | 36.0  |      |
| Actuated g/C Ratio                | 0.20  | 0.20 | 0.20                 |      |      | 0.20 |      |       | 0.45  |      |
| Clearance Time (s)                | 3.0   | 3.0  | 3.0                  |      |      | 3.0  |      |       | 3.0   |      |
| Lane Grp Cap (vph)                | 125   | 373  | 331                  |      |      | 959  |      |       | 1534  |      |
| v/s Ratio Prot                    |       | 0.04 | c0.16                |      |      |      |      |       | c0.40 |      |
| v/s Ratio Perm                    | 0.12  |      |                      |      |      | 0.15 |      |       |       |      |
| v/c Ratio                         | 0.61  | 0.20 | 0.78                 |      |      | 0.76 |      |       | 0.88  |      |
| Uniform Delay, d1                 | 29.1  | 26.6 | 30.4                 |      |      | 30.2 |      |       | 20.1  |      |
| Progression Factor                | 1.02  | 0.99 | 0.65                 |      |      | 0.73 |      |       | 1.00  |      |
| Incremental Delay, d2             | 13.6  | 0.8  | 14.9                 |      |      | 5.5  |      |       | 7.8   |      |
| Delay (s)                         | 43.2  | 27.1 | 34.6                 |      |      | 27.6 |      |       | 27.9  |      |
| Level of Service                  | D     | C    | C                    |      |      | C    |      |       | C     |      |
| Approach Delay (s)                |       | 35.3 | 34.6                 |      |      | 27.6 |      |       | 27.9  |      |
| Approach LOS                      |       | D    | C                    |      |      | C    |      |       | C     |      |
| <b>Intersection Summary</b>       |       |      |                      |      |      |      |      |       |       |      |
| HCM Average Control Delay         | 28.9  |      | HCM Level of Service |      | C    |      |      |       |       |      |
| HCM Volume to Capacity ratio      | 0.83  |      |                      |      |      |      |      |       |       |      |
| Actuated Cycle Length (s)         | 80.0  |      | Sum of lost time (s) |      | 12.0 |      |      |       |       |      |
| Intersection Capacity Utilization | 85.4% |      | ICU Level of Service |      | E    |      |      |       |       |      |
| Analysis Period (min)             | 15    |      |                      |      |      |      |      |       |       |      |
| c Critical Lane Group             |       |      |                      |      |      |      |      |       |       |      |

HCM Signalized Intersection Capacity Analysis  
5882: P Street & 30th Street

6/1/2005



| Movement               | EBL  | EBT   | WBT  | NBL2  | NBL  | NBT  | NBR  |
|------------------------|------|-------|------|-------|------|------|------|
| Lane Configurations    | ↙    | ↑     | ↕    | ↙     | ↙    | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900  | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0  | 4.0   | 4.0  | 4.0   | 4.0  | 4.0  |      |
| Lane Util. Factor      | 1.00 | 1.00  | 0.95 | 1.00  | 0.91 | 0.91 |      |
| Frt                    | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 0.98 |      |
| Flt Protected          | 0.95 | 1.00  | 1.00 | 0.95  | 0.95 | 1.00 |      |
| Satd. Flow (prot)      | 1770 | 1863  | 3539 | 1593  | 1449 | 3153 |      |
| Flt Permitted          | 0.38 | 1.00  | 1.00 | 0.95  | 0.95 | 1.00 |      |
| Satd. Flow (perm)      | 712  | 1863  | 3539 | 1593  | 1449 | 3153 |      |
| Volume (vph)           | 117  | 829   | 631  | 332   | 111  | 382  | 62   |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 117  | 829   | 631  | 332   | 111  | 382  | 62   |
| RTOR Reduction (vph)   | 0    | 0     | 0    | 0     | 0    | 15   | 0    |
| Lane Group Flow (vph)  | 117  | 829   | 631  | 332   | 111  | 429  | 0    |
| Parking (#/hr)         |      |       |      | 0     | 0    | 0    |      |
| Turn Type              | Perm |       |      | Perm  | Perm |      |      |
| Protected Phases       |      | 4     | 8    |       |      | 2    |      |
| Permitted Phases       | 4    |       |      | 2     | 2    |      |      |
| Actuated Green, G (s)  | 48.0 | 48.0  | 48.0 | 26.0  | 26.0 | 26.0 |      |
| Effective Green, g (s) | 47.0 | 47.0  | 47.0 | 25.0  | 25.0 | 25.0 |      |
| Actuated g/C Ratio     | 0.59 | 0.59  | 0.59 | 0.31  | 0.31 | 0.31 |      |
| Clearance Time (s)     | 3.0  | 3.0   | 3.0  | 3.0   | 3.0  | 3.0  |      |
| Lane Grp Cap (vph)     | 418  | 1095  | 2079 | 498   | 453  | 985  |      |
| v/s Ratio Prot         |      | c0.45 | 0.18 |       |      | 0.14 |      |
| v/s Ratio Perm         | 0.16 |       |      | c0.21 | 0.08 |      |      |
| v/c Ratio              | 0.28 | 0.76  | 0.30 | 0.67  | 0.25 | 0.44 |      |
| Uniform Delay, d1      | 8.1  | 12.3  | 8.3  | 23.9  | 20.5 | 21.9 |      |
| Progression Factor     | 0.48 | 0.64  | 1.10 | 1.00  | 1.00 | 1.00 |      |
| Incremental Delay, d2  | 1.3  | 4.0   | 0.3  | 6.9   | 1.3  | 1.4  |      |
| Delay (s)              | 5.3  | 11.8  | 9.4  | 30.8  | 21.8 | 23.3 |      |
| Level of Service       | A    | B     | A    | C     | C    | C    |      |
| Approach Delay (s)     |      | 11.0  | 9.4  |       |      | 25.9 |      |
| Approach LOS           |      | B     | A    |       |      | C    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 16.0  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.73  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 68.7% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
 5886: Capitol & 30th Street

6/1/2005



| Movement               | EBL   | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|-------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    | ↶     | ↷    |      | ↶    | ↷     |      | ↶    | ↷    |      | ↶    | ↷    | ↶    |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0   | 4.0  |      |      | 4.0   |      |      | 4.0  |      |      |      |      |
| Lane Util. Factor      | 1.00  | 0.95 |      |      | 0.95  |      |      | 0.91 |      |      |      |      |
| Fr't                   | 1.00  | 1.00 |      |      | 0.95  |      |      | 0.98 |      |      |      |      |
| Flt. Protected         | 0.95  | 1.00 |      |      | 1.00  |      |      | 0.99 |      |      |      |      |
| Satd. Flow (prot)      | 1770  | 3539 |      |      | 3354  |      |      | 4959 |      |      |      |      |
| Flt. Permitted         | 0.95  | 1.00 |      |      | 1.00  |      |      | 0.99 |      |      |      |      |
| Satd. Flow (perm)      | 1770  | 3539 |      |      | 3354  |      |      | 4959 |      |      |      |      |
| Volume (vph)           | 125   | 234  | 0    | 0    | 472   | 252  | 139  | 957  | 164  | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 125   | 234  | 0    | 0    | 472   | 252  | 139  | 957  | 164  | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0     | 0    | 0    | 0    | 88    | 0    | 0    | 25   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 125   | 234  | 0    | 0    | 636   | 0    | 0    | 1235 | 0    | 0    | 0    | 0    |
| Turn Type              | Prot  |      |      |      |       |      |      |      |      | Perm |      |      |
| Protected Phases       | 7     | 4    |      |      | 8     |      |      | 2    |      |      |      |      |
| Permitted Phases       |       |      |      |      |       |      | 2    |      |      |      |      |      |
| Actuated Green, G (s)  | 15.0  | 44.0 |      |      | 26.0  |      |      | 30.0 |      |      |      |      |
| Effective Green, g (s) | 14.0  | 43.0 |      |      | 25.0  |      |      | 29.0 |      |      |      |      |
| Actuated g/C Ratio     | 0.18  | 0.54 |      |      | 0.31  |      |      | 0.36 |      |      |      |      |
| Clearance Time (s)     | 3.0   | 3.0  |      |      | 3.0   |      |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)     | 310   | 1902 |      |      | 1048  |      |      | 1798 |      |      |      |      |
| v/s Ratio Prot         | c0.07 | 0.07 |      |      | c0.19 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |       |      |      |      |       |      |      | 0.25 |      |      |      |      |
| v/c Ratio              | 0.40  | 0.12 |      |      | 0.61  |      |      | 0.69 |      |      |      |      |
| Uniform Delay, d1      | 29.3  | 9.2  |      |      | 23.3  |      |      | 21.6 |      |      |      |      |
| Progression Factor     | 1.05  | 0.84 |      |      | 0.16  |      |      | 0.77 |      |      |      |      |
| Incremental Delay, d2  | 3.6   | 0.1  |      |      | 1.4   |      |      | 1.4  |      |      |      |      |
| Delay (s)              | 34.4  | 7.8  |      |      | 5.2   |      |      | 18.1 |      |      |      |      |
| Level of Service       | C     | A    |      |      | A     |      |      | B    |      |      |      |      |
| Approach Delay (s)     |       | 17.1 |      |      | 5.2   |      |      | 18.1 |      |      | 0.0  |      |
| Approach LOS           |       | B    |      |      | A     |      |      | B    |      |      | A    |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 14.0  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.60  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 63.0% | ICU Level of Service | B    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 5888: Capitol & 29th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑↑   |      | ↖    | ↑↑   |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      | 4.0  | 4.0  |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 0.95 |      | 1.00 | 0.95 |      |      |      |      |      | 0.91 |      |
| Frnt                   |      | 0.94 |      | 1.00 | 1.00 |      |      |      |      |      | 0.98 |      |
| Flt Protected          |      | 1.00 |      | 0.95 | 1.00 |      |      |      |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 3174 |      | 1770 | 3539 |      |      |      |      |      | 4785 |      |
| Flt Permitted          |      | 1.00 |      | 0.53 | 1.00 |      |      |      |      |      | 1.00 |      |
| Satd. Flow (perm)      |      | 3174 |      | 981  | 3539 |      |      |      |      |      | 4785 |      |
| Volume (vph)           | 0    | 214  | 127  | 162  | 482  | 0    | 0    | 0    | 0    | 147  | 1203 | 233  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 214  | 127  | 162  | 482  | 0    | 0    | 0    | 0    | 147  | 1203 | 233  |
| RTOR Reduction (vph)   | 0    | 23   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 30   | 0    |
| Lane Group Flow (vph)  | 0    | 318  | 0    | 162  | 482  | 0    | 0    | 0    | 0    | 0    | 1553 | 0    |
| Parking (#/hr)         |      | 0    | 0    |      |      |      |      |      |      |      | 0    | 0    |
| Turn Type              |      |      |      | Perm |      |      |      |      |      |      | Perm |      |
| Protected Phases       |      | 4    |      |      | 8    |      |      |      |      |      |      | 6    |
| Permitted Phases       |      |      |      | 8    |      |      |      |      |      | 6    |      |      |
| Actuated Green, G (s)  |      | 34.0 |      | 34.0 | 34.0 |      |      |      |      |      | 40.0 |      |
| Effective Green, g (s) |      | 33.0 |      | 33.0 | 33.0 |      |      |      |      |      | 39.0 |      |
| Actuated g/C Ratio     |      | 0.41 |      | 0.41 | 0.41 |      |      |      |      |      | 0.49 |      |
| Clearance Time (s)     |      | 3.0  |      | 3.0  | 3.0  |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 1309 |      | 405  | 1460 |      |      |      |      |      | 2333 |      |
| v/s Ratio Prot         |      | 0.10 |      |      | 0.14 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      |      | 0.17 |      |      |      |      |      |      | 0.32 |      |
| v/c Ratio              |      | 0.24 |      | 0.40 | 0.33 |      |      |      |      |      | 0.67 |      |
| Uniform Delay, d1      |      | 15.3 |      | 16.5 | 16.0 |      |      |      |      |      | 15.6 |      |
| Progression Factor     |      | 0.71 |      | 0.60 | 0.60 |      |      |      |      |      | 0.50 |      |
| Incremental Delay, d2  |      | 0.4  |      | 2.3  | 0.5  |      |      |      |      |      | 1.3  |      |
| Delay (s)              |      | 11.3 |      | 12.2 | 10.1 |      |      |      |      |      | 9.1  |      |
| Level of Service       |      | B    |      | B    | B    |      |      |      |      |      | A    |      |
| Approach Delay (s)     |      | 11.3 |      |      | 10.6 |      |      | 0.0  |      |      | 9.1  |      |
| Approach LOS           |      | B    |      |      | B    |      |      | A    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 9.8   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.54  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 63.0% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
5890: Capitol & 26th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|-------|------|------|------|------|
| Lane Configurations    | ↖    | ↗    |      | ↖    | ↗     |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0  | 4.0  |      | 4.0  | 4.0   |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor      | 1.00 | 1.00 |      | 1.00 | 1.00  |      |      | 1.00  |      |      | 1.00 |      |
| Frt                    | 1.00 | 1.00 |      | 1.00 | 0.99  |      |      | 0.97  |      |      | 0.98 |      |
| Flt Protected          | 0.95 | 1.00 |      | 0.95 | 1.00  |      |      | 0.99  |      |      | 0.99 |      |
| Satd. Flow (prot)      | 1770 | 1669 |      | 1770 | 1666  |      |      | 1608  |      |      | 1629 |      |
| Flt Permitted          | 0.35 | 1.00 |      | 0.51 | 1.00  |      |      | 0.97  |      |      | 0.96 |      |
| Satd. Flow (perm)      | 645  | 1669 |      | 946  | 1666  |      |      | 1567  |      |      | 1579 |      |
| Volume (vph)           | 9    | 353  | 11   | 6    | 556   | 23   | 12   | 37    | 15   | 9    | 25   | 5    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 9    | 353  | 11   | 6    | 556   | 23   | 12   | 37    | 15   | 9    | 25   | 5    |
| RTOR Reduction (vph)   | 0    | 2    | 0    | 0    | 3     | 0    | 0    | 11    | 0    | 0    | 4    | 0    |
| Lane Group Flow (vph)  | 9    | 362  | 0    | 6    | 577   | 0    | 0    | 53    | 0    | 0    | 35   | 0    |
| Parking (#/hr)         |      | 0    | 0    |      | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      |      | Perm |       |      | Perm |       |      | Perm |      |      |
| Protected Phases       |      | 4    |      |      | 8     |      |      | 2     |      |      | 6    |      |
| Permitted Phases       | 4    |      |      | 8    |       |      | 2    |       |      | 6    |      |      |
| Actuated Green, G (s)  | 36.0 | 36.0 |      | 36.0 | 36.0  |      |      | 18.0  |      |      | 18.0 |      |
| Effective Green, g (s) | 35.0 | 35.0 |      | 35.0 | 35.0  |      |      | 17.0  |      |      | 17.0 |      |
| Actuated g/C Ratio     | 0.58 | 0.58 |      | 0.58 | 0.58  |      |      | 0.28  |      |      | 0.28 |      |
| Clearance Time (s)     | 3.0  | 3.0  |      | 3.0  | 3.0   |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)     | 376  | 974  |      | 552  | 972   |      |      | 444   |      |      | 447  |      |
| v/s Ratio Prot         |      | 0.22 |      |      | c0.35 |      |      |       |      |      |      |      |
| v/s Ratio Perm         | 0.01 |      |      | 0.01 |       |      |      | c0.03 |      |      | 0.02 |      |
| v/c Ratio              | 0.02 | 0.37 |      | 0.01 | 0.59  |      |      | 0.12  |      |      | 0.08 |      |
| Uniform Delay, d1      | 5.3  | 6.7  |      | 5.2  | 8.0   |      |      | 16.0  |      |      | 15.8 |      |
| Progression Factor     | 1.00 | 1.00 |      | 1.00 | 1.00  |      |      | 1.00  |      |      | 0.66 |      |
| Incremental Delay, d2  | 0.1  | 1.1  |      | 0.0  | 2.7   |      |      | 0.6   |      |      | 0.3  |      |
| Delay (s)              | 5.4  | 7.7  |      | 5.3  | 10.6  |      |      | 16.5  |      |      | 10.8 |      |
| Level of Service       | A    | A    |      | A    | B     |      |      | B     |      |      | B    |      |
| Approach Delay (s)     |      | 7.7  |      |      | 10.6  |      |      | 16.5  |      |      | 10.8 |      |
| Approach LOS           |      | A    |      |      | B     |      |      | B     |      |      | B    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 9.9   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.44  |                      |     |
| Actuated Cycle Length (s)         | 60.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 41.7% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
6481: J Street & 28th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR    | WBL  | WBT  | WBR  | NBL   | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|--------|------|------|------|-------|------|------|------|------|------|
| Lane Configurations    |      | ↔↔↔  |        |      |      | ↗    |       | ↖    |      |      | ↖    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900   | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |        |      |      |      |       | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor      |      | 0.91 |        |      |      |      |       | 1.00 |      |      | 1.00 |      |
| Frt                    |      | 1.00 |        |      |      |      |       | 0.93 |      |      | 1.00 |      |
| Flt Protected          |      | 1.00 |        |      |      |      |       | 1.00 |      |      | 0.99 |      |
| Satd. Flow (prot)      |      | 4888 |        |      |      |      |       | 1560 |      |      | 1656 |      |
| Flt Permitted          |      | 1.00 |        |      |      |      |       | 1.00 |      |      | 0.94 |      |
| Satd. Flow (perm)      |      | 4888 |        |      |      |      |       | 1560 |      |      | 1569 |      |
| Volume (vph)           | 28   | 1108 | 35     | 0    | 0    | 0    | 0     | 90   | 96   | 14   | 42   | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00   | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 28   | 1108 | 35     | 0    | 0    | 0    | 0     | 90   | 96   | 14   | 42   | 0    |
| RTOR Reduction (vph)   | 0    | 4    | 0      | 0    | 0    | 0    | 0     | 37   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 1167 | 0      | 0    | 0    | 0    | 0     | 149  | 0    | 0    | 56   | 0    |
| Parking (#/hr)         | 0    | 0    | 0      |      |      |      |       | 0    | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      | custom |      |      |      | Perm  |      | Perm |      |      |      |
| Protected Phases       | 4    |      |        |      |      |      | 2     |      | 6    |      |      |      |
| Permitted Phases       | 4    |      |        |      |      |      | 8     |      | 6    |      |      |      |
| Actuated Green, G (s)  | 42.0 |      |        |      |      |      | 32.0  |      | 32.0 |      |      |      |
| Effective Green, g (s) | 41.0 |      |        |      |      |      | 31.0  |      | 31.0 |      |      |      |
| Actuated g/C Ratio     | 0.51 |      |        |      |      |      | 0.39  |      | 0.39 |      |      |      |
| Clearance Time (s)     | 3.0  |      |        |      |      |      | 3.0   |      | 3.0  |      |      |      |
| Lane Grp Cap (vph)     | 2505 |      |        |      |      |      | 605   |      | 608  |      |      |      |
| v/s Ratio Prot         |      |      |        |      |      |      | c0.10 |      |      |      |      |      |
| v/s Ratio Perm         | 0.24 |      |        |      |      |      |       |      | 0.04 |      |      |      |
| v/c Ratio              | 0.47 |      |        |      |      |      | 0.25  |      | 0.09 |      |      |      |
| Uniform Delay, d1      | 12.5 |      |        |      |      |      | 16.6  |      | 15.6 |      |      |      |
| Progression Factor     | 1.00 |      |        |      |      |      | 0.71  |      | 1.00 |      |      |      |
| Incremental Delay, d2  | 0.6  |      |        |      |      |      | 1.0   |      | 0.3  |      |      |      |
| Delay (s)              | 13.1 |      |        |      |      |      | 12.8  |      | 15.9 |      |      |      |
| Level of Service       | B    |      |        |      |      |      | B     |      | B    |      |      |      |
| Approach Delay (s)     | 13.1 |      | 0.0    |      |      |      | 12.8  |      | 15.9 |      |      |      |
| Approach LOS           | B    |      | A      |      |      |      | B     |      | B    |      |      |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 13.2  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.37  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 43.9% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
6482: K Street & 28th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|-------|------|------|------|------|
| Lane Configurations    |      | ↕    | ↗    |      | ↕     | ↗    |      | ↕     | ↗    |      | ↕    | ↗    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  |      | 4.0   | 4.0  |      | 4.0   | 4.0  |      | 4.0  | 4.0  |
| Lane Util. Factor      |      | 1.00 | 1.00 |      | 1.00  | 1.00 |      | 1.00  | 1.00 |      | 1.00 | 1.00 |
| Frts                   |      | 1.00 | 0.85 |      | 1.00  | 0.85 |      | 1.00  | 0.85 |      | 1.00 | 0.85 |
| Flt Protected          |      | 1.00 | 1.00 |      | 1.00  | 1.00 |      | 0.99  | 1.00 |      | 0.99 | 1.00 |
| Satd. Flow (prot)      |      | 1671 | 1425 |      | 1671  | 1425 |      | 1655  | 1425 |      | 1658 | 1425 |
| Flt Permitted          |      | 0.95 | 1.00 |      | 0.97  | 1.00 |      | 0.90  | 1.00 |      | 0.92 | 1.00 |
| Satd. Flow (perm)      |      | 1597 | 1425 |      | 1623  | 1425 |      | 1516  | 1425 |      | 1543 | 1425 |
| Volume (vph)           | 14   | 189  | 19   | 53   | 699   | 98   | 45   | 128   | 148  | 24   | 84   | 9    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 14   | 189  | 19   | 53   | 699   | 98   | 45   | 128   | 148  | 24   | 84   | 9    |
| RTOR Reduction (vph)   | 0    | 0    | 6    | 0    | 0     | 20   | 0    | 0     | 115  | 0    | 0    | 7    |
| Lane Group Flow (vph)  | 0    | 203  | 13   | 0    | 752   | 78   | 0    | 173   | 33   | 0    | 108  | 2    |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      | Perm | Perm |       | Perm | Perm |       | Perm | Perm |      | Perm |
| Protected Phases       |      | 4    |      |      | 8     |      |      | 2     |      |      | 6    |      |
| Permitted Phases       | 4    |      | 4    | 8    |       | 8    | 2    |       | 2    | 6    |      | 6    |
| Actuated Green, G (s)  |      | 55.0 | 55.0 |      | 55.0  | 55.0 |      | 19.0  | 19.0 |      | 19.0 | 19.0 |
| Effective Green, g (s) |      | 54.0 | 54.0 |      | 54.0  | 54.0 |      | 18.0  | 18.0 |      | 18.0 | 18.0 |
| Actuated g/C Ratio     |      | 0.68 | 0.68 |      | 0.68  | 0.68 |      | 0.22  | 0.22 |      | 0.22 | 0.22 |
| Clearance Time (s)     |      | 3.0  | 3.0  |      | 3.0   | 3.0  |      | 3.0   | 3.0  |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |      | 1078 | 962  |      | 1096  | 962  |      | 341   | 321  |      | 347  | 321  |
| v/s Ratio Prot         |      |      |      |      |       |      |      |       |      |      |      |      |
| v/s Ratio Perm         |      | 0.13 | 0.01 |      | c0.46 | 0.05 |      | c0.11 | 0.02 |      | 0.07 | 0.00 |
| v/c Ratio              |      | 0.19 | 0.01 |      | 0.69  | 0.08 |      | 0.51  | 0.10 |      | 0.31 | 0.01 |
| Uniform Delay, d1      |      | 4.8  | 4.3  |      | 7.9   | 4.5  |      | 27.1  | 24.6 |      | 25.8 | 24.1 |
| Progression Factor     |      | 1.00 | 1.00 |      | 0.62  | 0.00 |      | 0.90  | 1.02 |      | 0.87 | 0.80 |
| Incremental Delay, d2  |      | 0.4  | 0.0  |      | 2.8   | 0.1  |      | 4.9   | 0.6  |      | 2.3  | 0.0  |
| Delay (s)              |      | 5.2  | 4.3  |      | 7.8   | 0.1  |      | 29.1  | 25.7 |      | 24.7 | 19.2 |
| Level of Service       |      | A    | A    |      | A     | A    |      | C     | C    |      | C    | B    |
| Approach Delay (s)     |      | 5.1  |      |      | 6.9   |      |      | 27.6  |      |      | 24.3 |      |
| Approach LOS           |      | A    |      |      | A     |      |      | C     |      |      | C    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 12.4  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.64  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 78.7% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6483: L Street & 28th Street

6/1/2005



| Movement                          | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|------|------|-------|------|------|-------|------|------|------|------|
| Lane Configurations               |      | ↕    |      |      | ↕     |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0  |      |      | 4.0   |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor                 |      | 1.00 |      |      | 1.00  |      |      | 1.00  |      |      | 1.00 |      |
| Fr <sub>t</sub>                   |      | 0.97 |      |      | 0.98  |      |      | 1.00  |      |      | 0.97 |      |
| Fl <sub>t</sub> Protected         |      | 0.99 |      |      | 0.99  |      |      | 0.99  |      |      | 1.00 |      |
| Satd. Flow (prot)                 |      | 1617 |      |      | 1618  |      |      | 1649  |      |      | 1615 |      |
| Fl <sub>t</sub> Permitted         |      | 0.91 |      |      | 0.80  |      |      | 0.90  |      |      | 0.98 |      |
| Satd. Flow (perm)                 |      | 1472 |      |      | 1304  |      |      | 1510  |      |      | 1582 |      |
| Volume (vph)                      | 60   | 339  | 113  | 121  | 294   | 85   | 44   | 133   | 6    | 13   | 107  | 38   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 60   | 339  | 113  | 121  | 294   | 85   | 44   | 133   | 6    | 13   | 107  | 38   |
| RTOR Reduction (vph)              | 0    | 13   | 0    | 0    | 9     | 0    | 0    | 1     | 0    | 0    | 14   | 0    |
| Lane Group Flow (vph)             | 0    | 499  | 0    | 0    | 491   | 0    | 0    | 182   | 0    | 0    | 144  | 0    |
| Parking (#/hr)                    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type                         | Perm |      |      | Perm |       |      | Perm |       |      | Perm |      |      |
| Protected Phases                  |      | 2    |      |      | 6     |      |      | 3     |      |      | 7    |      |
| Permitted Phases                  | 2    |      |      | 6    |       |      | 3    | 3     |      | 7    |      |      |
| Actuated Green, G (s)             |      | 50.0 |      |      | 50.0  |      |      | 24.0  |      |      | 24.0 |      |
| Effective Green, g (s)            |      | 49.0 |      |      | 49.0  |      |      | 23.0  |      |      | 23.0 |      |
| Actuated g/C Ratio                |      | 0.61 |      |      | 0.61  |      |      | 0.29  |      |      | 0.29 |      |
| Clearance Time (s)                |      | 3.0  |      |      | 3.0   |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |      | 902  |      |      | 799   |      |      | 434   |      |      | 455  |      |
| v/s Ratio Prot                    |      |      |      |      |       |      |      |       |      |      |      |      |
| v/s Ratio Perm                    |      | 0.34 |      |      | c0.38 |      |      | c0.12 |      |      | 0.09 |      |
| v/c Ratio                         |      | 0.55 |      |      | 0.61  |      |      | 0.42  |      |      | 0.32 |      |
| Uniform Delay, d <sub>1</sub>     |      | 9.1  |      |      | 9.6   |      |      | 23.1  |      |      | 22.3 |      |
| Progression Factor                |      | 1.00 |      |      | 0.26  |      |      | 0.67  |      |      | 0.56 |      |
| Incremental Delay, d <sub>2</sub> |      | 2.4  |      |      | 2.8   |      |      | 2.4   |      |      | 1.7  |      |
| Delay (s)                         |      | 11.5 |      |      | 5.3   |      |      | 18.0  |      |      | 14.1 |      |
| Level of Service                  |      | B    |      |      | A     |      |      | B     |      |      | B    |      |
| Approach Delay (s)                |      | 11.5 |      |      | 5.3   |      |      | 18.0  |      |      | 14.1 |      |
| Approach LOS                      |      | B    |      |      | A     |      |      | B     |      |      | B    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.4  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.55  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 75.9% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6484: Capitol & 28th Street

6/1/2005



| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|---------------------------|------|------|------|------|-------|------|------|-------|------|------|------|------|
| Lane Configurations       |      | ↕    |      |      | ↕     |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |      | 4.0  |      |      | 4.0   |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor         |      | 1.00 |      |      | 0.95  |      |      | 1.00  |      |      | 1.00 |      |
| Fr <sub>t</sub>           |      | 0.99 |      |      | 0.99  |      |      | 0.95  |      |      | 0.99 |      |
| Fl <sub>t</sub> Protected |      | 1.00 |      |      | 0.99  |      |      | 0.99  |      |      | 0.99 |      |
| Satd. Flow (prot)         |      | 1657 |      |      | 3307  |      |      | 1570  |      |      | 1647 |      |
| Fl <sub>t</sub> Permitted |      | 0.95 |      |      | 0.87  |      |      | 0.83  |      |      | 0.94 |      |
| Satd. Flow (perm)         |      | 1580 |      |      | 2881  |      |      | 1327  |      |      | 1553 |      |
| Volume (vph)              | 20   | 301  | 23   | 76   | 553   | 50   | 107  | 141   | 150  | 35   | 267  | 30   |
| Peak-hour factor, PHF     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 20   | 301  | 23   | 76   | 553   | 50   | 107  | 141   | 150  | 35   | 267  | 30   |
| RTOR Reduction (vph)      | 0    | 3    | 0    | 0    | 7     | 0    | 0    | 27    | 0    | 0    | 5    | 0    |
| Lane Group Flow (vph)     | 0    | 341  | 0    | 0    | 672   | 0    | 0    | 371   | 0    | 0    | 327  | 0    |
| Parking (#/hr)            | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type                 | Perm |      | Perm |      | Perm  |      | Perm |       | Perm |      | Perm |      |
| Protected Phases          |      | 4    |      |      | 8     |      |      | 2     |      |      |      | 6    |
| Permitted Phases          | 4    |      |      | 8    |       |      | 2    |       |      | 6    |      |      |
| Actuated Green, G (s)     |      | 34.0 |      |      | 34.0  |      |      | 40.0  |      |      |      | 40.0 |
| Effective Green, g (s)    |      | 33.0 |      |      | 33.0  |      |      | 39.0  |      |      |      | 39.0 |
| Actuated g/C Ratio        |      | 0.41 |      |      | 0.41  |      |      | 0.49  |      |      |      | 0.49 |
| Clearance Time (s)        |      | 3.0  |      |      | 3.0   |      |      | 3.0   |      |      |      | 3.0  |
| Lane Grp Cap (vph)        |      | 652  |      |      | 1188  |      |      | 647   |      |      |      | 757  |
| v/s Ratio Prot            |      |      |      |      |       |      |      |       |      |      |      |      |
| v/s Ratio Perm            |      | 0.22 |      |      | c0.23 |      |      | c0.28 |      |      |      | 0.21 |
| v/c Ratio                 |      | 0.52 |      |      | 0.57  |      |      | 0.57  |      |      |      | 0.43 |
| Uniform Delay, d1         |      | 17.6 |      |      | 18.0  |      |      | 14.6  |      |      |      | 13.3 |
| Progression Factor        |      | 1.00 |      |      | 0.53  |      |      | 1.05  |      |      |      | 0.91 |
| Incremental Delay, d2     |      | 3.0  |      |      | 1.8   |      |      | 2.3   |      |      |      | 1.6  |
| Delay (s)                 |      | 20.6 |      |      | 11.3  |      |      | 17.6  |      |      |      | 13.7 |
| Level of Service          |      | C    |      |      | B     |      |      | B     |      |      |      | B    |
| Approach Delay (s)        |      | 20.6 |      |      | 11.3  |      |      | 17.6  |      |      |      | 13.7 |
| Approach LOS              |      | C    |      |      | B     |      |      | B     |      |      |      | B    |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 15.0  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.57  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 88.1% | ICU Level of Service | E   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
6485: N Street & 28th Street

6/1/2005



| Movement                          | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|------|------|-------|------|------|-------|------|------|------|------|
| Lane Configurations               |      | ↕    |      |      | ↕     |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0  |      |      | 4.0   |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor                 |      | 1.00 |      |      | 1.00  |      |      | 1.00  |      |      | 1.00 |      |
| Fr <sub>t</sub>                   |      | 1.00 |      |      | 0.97  |      |      | 0.98  |      |      | 0.99 |      |
| Fl <sub>t</sub> Protected         |      | 0.99 |      |      | 1.00  |      |      | 0.99  |      |      | 0.97 |      |
| Satd. Flow (prot)                 |      | 1654 |      |      | 1620  |      |      | 1627  |      |      | 1610 |      |
| Fl <sub>t</sub> Permitted         |      | 0.82 |      |      | 0.98  |      |      | 0.92  |      |      | 0.52 |      |
| Satd. Flow (perm)                 |      | 1377 |      |      | 1593  |      |      | 1508  |      |      | 865  |      |
| Volume (vph)                      | 37   | 157  | 6    | 38   | 608   | 199  | 63   | 213   | 48   | 112  | 50   | 11   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 37   | 157  | 6    | 38   | 608   | 199  | 63   | 213   | 48   | 112  | 50   | 11   |
| RTOR Reduction (vph)              | 0    | 2    | 0    | 0    | 14    | 0    | 0    | 8     | 0    | 0    | 3    | 0    |
| Lane Group Flow (vph)             | 0    | 199  | 0    | 0    | 831   | 0    | 0    | 316   | 0    | 0    | 170  | 0    |
| Parking (#/hr)                    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type                         | Perm |      |      | Perm |       |      | Perm |       |      | Perm |      |      |
| Protected Phases                  |      | 2    |      |      | 6     |      |      | 8     |      |      | 4    |      |
| Permitted Phases                  | 2    |      |      | 6    |       |      | 8    |       |      | 4    |      |      |
| Actuated Green, G (s)             |      | 51.0 |      |      | 51.0  |      |      | 23.0  |      |      | 23.0 |      |
| Effective Green, g (s)            |      | 50.0 |      |      | 50.0  |      |      | 22.0  |      |      | 22.0 |      |
| Actuated g/C Ratio                |      | 0.62 |      |      | 0.62  |      |      | 0.28  |      |      | 0.28 |      |
| Clearance Time (s)                |      | 3.0  |      |      | 3.0   |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |      | 861  |      |      | 996   |      |      | 415   |      |      | 238  |      |
| v/s Ratio Prot                    |      |      |      |      |       |      |      |       |      |      |      |      |
| v/s Ratio Perm                    |      | 0.14 |      |      | c0.52 |      |      | c0.21 |      |      | 0.20 |      |
| v/c Ratio                         |      | 0.23 |      |      | 0.83  |      |      | 0.76  |      |      | 0.71 |      |
| Uniform Delay, d <sub>1</sub>     |      | 6.6  |      |      | 11.8  |      |      | 26.6  |      |      | 26.2 |      |
| Progression Factor                |      | 1.00 |      |      | 0.83  |      |      | 1.00  |      |      | 1.34 |      |
| Incremental Delay, d <sub>2</sub> |      | 0.6  |      |      | 3.0   |      |      | 12.4  |      |      | 15.2 |      |
| Delay (s)                         |      | 7.2  |      |      | 12.8  |      |      | 39.0  |      |      | 50.2 |      |
| Level of Service                  |      | A    |      |      | B     |      |      | D     |      |      | D    |      |
| Approach Delay (s)                |      | 7.2  |      |      | 12.8  |      |      | 39.0  |      |      | 50.2 |      |
| Approach LOS                      |      | A    |      |      | B     |      |      | D     |      |      | D    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 21.8  | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 0.81  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 81.2% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
6511: K Street & Alhambra

6/1/2005



| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations       |      | ↕    | ↗    |      | ↕    |      |      | ↕    |      |      | ↕    | ↕    |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |      | 4.0  | 4.0  |      | 4.0  |      |      | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor         |      | 1.00 | 1.00 |      | 1.00 |      |      | 0.95 |      |      | 0.95 |      |
| Fr <sub>t</sub>           |      | 1.00 | 0.85 |      | 0.99 |      |      | 0.99 |      |      | 0.95 |      |
| Fl <sub>t</sub> Protected |      | 0.99 | 1.00 |      | 0.99 |      |      | 0.99 |      |      | 1.00 |      |
| Satd. Flow (prot)         |      | 1847 | 1583 |      | 1822 |      |      | 3455 |      |      | 3370 |      |
| Fl <sub>t</sub> Permitted |      | 0.97 | 1.00 |      | 0.94 |      |      | 0.58 |      |      | 0.95 |      |
| Satd. Flow (perm)         |      | 1811 | 1583 |      | 1734 |      |      | 2016 |      |      | 3217 |      |
| Volume (vph)              | 7    | 35   | 101  | 25   | 61   | 6    | 131  | 328  | 36   | 3    | 696  | 325  |
| Peak-hour factor, PHF     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 7    | 35   | 101  | 25   | 61   | 6    | 131  | 328  | 36   | 3    | 696  | 325  |
| RTOR Reduction (vph)      | 0    | 0    | 66   | 0    | 3    | 0    | 0    | 7    | 0    | 0    | 68   | 0    |
| Lane Group Flow (vph)     | 0    | 42   | 35   | 0    | 89   | 0    | 0    | 488  | 0    | 0    | 956  | 0    |
| Turn Type                 | Perm |      | Perm | Perm |      |      | Perm |      |      | Perm |      |      |
| Protected Phases          |      | 4    |      |      | 8    |      |      | 2    |      |      | 6    |      |
| Permitted Phases          | 4    |      | 4    | 8    |      |      | 2    |      |      | 6    |      |      |
| Actuated Green, G (s)     |      | 29.0 | 29.0 |      | 29.0 |      |      | 45.0 |      |      | 45.0 |      |
| Effective Green, g (s)    |      | 28.0 | 28.0 |      | 28.0 |      |      | 44.0 |      |      | 44.0 |      |
| Actuated g/C Ratio        |      | 0.35 | 0.35 |      | 0.35 |      |      | 0.55 |      |      | 0.55 |      |
| Clearance Time (s)        |      | 3.0  | 3.0  |      | 3.0  |      |      | 3.0  |      |      | 3.0  |      |
| Lane Grp Cap (vph)        |      | 634  | 554  |      | 607  |      |      | 1109 |      |      | 1769 |      |
| v/s Ratio Prot            |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm            |      | 0.02 | 0.02 |      | 0.05 |      |      | 0.24 |      |      | 0.30 |      |
| v/c Ratio                 |      | 0.07 | 0.06 |      | 0.15 |      |      | 0.44 |      |      | 0.54 |      |
| Uniform Delay, d1         |      | 17.3 | 17.3 |      | 17.8 |      |      | 10.7 |      |      | 11.5 |      |
| Progression Factor        |      | 0.45 | 0.14 |      | 1.00 |      |      | 0.82 |      |      | 0.37 |      |
| Incremental Delay, d2     |      | 0.2  | 0.2  |      | 0.5  |      |      | 1.0  |      |      | 0.5  |      |
| Delay (s)                 |      | 8.0  | 2.7  |      | 18.3 |      |      | 9.7  |      |      | 4.8  |      |
| Level of Service          |      | A    | A    |      | B    |      |      | A    |      |      | A    |      |
| Approach Delay (s)        |      | 4.2  |      |      | 18.3 |      |      | 9.7  |      |      | 4.8  |      |
| Approach LOS              |      | A    |      |      | B    |      |      | A    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 6.8   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.39  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 65.4% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 9622: K Street & 30th Street

6/1/2005



| Movement                          | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations               | ↖    | ↑    |      |      | ↑     | ↗    |      | ↕↕↕  |      |      |      |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               | 4.0  | 4.0  |      |      | 4.0   | 4.0  |      | 4.0  |      |      |      |      |
| Lane Util. Factor                 | 1.00 | 1.00 |      |      | 1.00  | 1.00 |      | 0.91 |      |      |      |      |
| Fr <sub>t</sub>                   | 1.00 | 1.00 |      |      | 1.00  | 0.85 |      | 1.00 |      |      |      |      |
| Fl <sub>t</sub> Protected         | 0.95 | 1.00 |      |      | 1.00  | 1.00 |      | 0.99 |      |      |      |      |
| Satd. Flow (prot)                 | 1770 | 1863 |      |      | 1863  | 1583 |      | 5016 |      |      |      |      |
| Fl <sub>t</sub> Permitted         | 0.37 | 1.00 |      |      | 1.00  | 1.00 |      | 0.99 |      |      |      |      |
| Satd. Flow (perm)                 | 695  | 1863 |      |      | 1863  | 1583 |      | 5016 |      |      |      |      |
| Volume (vph)                      | 121  | 97   | 0    | 0    | 456   | 12   | 303  | 841  | 5    | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 121  | 97   | 0    | 0    | 456   | 12   | 303  | 841  | 5    | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0    | 0    | 0    | 0    | 0     | 4    | 0    | 1    | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 121  | 97   | 0    | 0    | 456   | 8    | 0    | 1148 | 0    | 0    | 0    | 0    |
| Turn Type                         | Perm |      |      |      |       | Perm | Perm |      |      |      |      |      |
| Protected Phases                  |      | 4    |      |      | 8     |      |      | 2    |      |      |      |      |
| Permitted Phases                  | 4    |      |      |      |       | 8    | 2    |      |      |      |      |      |
| Actuated Green, G (s)             | 40.0 | 40.0 |      |      | 40.0  | 40.0 |      | 34.0 |      |      |      |      |
| Effective Green, g (s)            | 39.0 | 39.0 |      |      | 39.0  | 39.0 |      | 33.0 |      |      |      |      |
| Actuated g/C Ratio                | 0.49 | 0.49 |      |      | 0.49  | 0.49 |      | 0.41 |      |      |      |      |
| Clearance Time (s)                | 3.0  | 3.0  |      |      | 3.0   | 3.0  |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)                | 339  | 908  |      |      | 908   | 772  |      | 2069 |      |      |      |      |
| v/s Ratio Prot                    |      | 0.05 |      |      | c0.24 |      |      |      |      |      |      |      |
| v/s Ratio Perm                    | 0.17 |      |      |      |       | 0.00 |      | 0.23 |      |      |      |      |
| v/c Ratio                         | 0.36 | 0.11 |      |      | 0.50  | 0.01 |      | 0.56 |      |      |      |      |
| Uniform Delay, d <sub>1</sub>     | 12.7 | 11.1 |      |      | 13.9  | 10.6 |      | 17.9 |      |      |      |      |
| Progression Factor                | 1.00 | 0.94 |      |      | 1.22  | 1.13 |      | 0.31 |      |      |      |      |
| Incremental Delay, d <sub>2</sub> | 2.7  | 0.2  |      |      | 1.8   | 0.0  |      | 1.0  |      |      |      |      |
| Delay (s)                         | 15.5 | 10.6 |      |      | 18.8  | 12.0 |      | 6.5  |      |      |      |      |
| Level of Service                  | B    | B    |      |      | B     | B    |      | A    |      |      |      |      |
| Approach Delay (s)                |      | 13.3 |      |      | 18.6  |      |      | 6.5  |      |      | 0.0  |      |
| Approach LOS                      |      | B    |      |      | B     |      |      | A    |      |      | A    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.4  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.53  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 64.9% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

CUMULATIVE PLUS SUTTER PROJECT  
WITH CENTRAL CITY TWO WAY CONVERSION

PM Peak Hour

Signalized Intersections

(pm11)



HCM Signalized Intersection Capacity Analysis  
 2004: L Street & 21th Street

7/11/2005



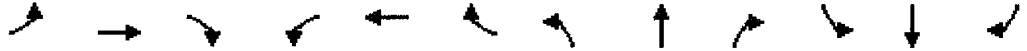
| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations       |      | ↕    |      |      | ↕    |      |      | ↕↗   |      |      |      |      |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |      | 4.0  |      |      | 4.0  |      |      | 4.0  |      |      |      |      |
| Lane Util. Factor         |      | 1.00 |      |      | 1.00 |      |      | 0.95 |      |      |      |      |
| Fr <sub>t</sub>           |      | 1.00 |      |      | 0.98 |      |      | 1.00 |      |      |      |      |
| Fl <sub>t</sub> Protected |      | 0.99 |      |      | 1.00 |      |      | 1.00 |      |      |      |      |
| Satd. Flow (prot)         |      | 1656 |      |      | 1642 |      |      | 3338 |      |      |      |      |
| Fl <sub>t</sub> Permitted |      | 0.65 |      |      | 1.00 |      |      | 1.00 |      |      |      |      |
| Satd. Flow (perm)         |      | 1087 |      |      | 1642 |      |      | 3338 |      |      |      |      |
| Volume (vph)              | 136  | 407  | 0    | 0    | 381  | 68   | 70   | 1358 | 49   | 0    | 0    | 0    |
| Peak-hour factor, PHF     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 136  | 407  | 0    | 0    | 381  | 68   | 70   | 1358 | 49   | 0    | 0    | 0    |
| RTOR Reduction (vph)      | 0    | 0    | 0    | 0    | 7    | 0    | 0    | 3    | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)     | 0    | 543  | 0    | 0    | 442  | 0    | 0    | 1474 | 0    | 0    | 0    | 0    |
| Parking (#/hr)            | 0    | 0    |      |      | 0    | 0    | 0    | 0    | 0    |      |      |      |
| Turn Type                 | Perm |      |      |      |      |      | Perm |      |      |      |      |      |
| Protected Phases          |      | 2    |      |      | 6    |      |      | 8    |      |      |      |      |
| Permitted Phases          | 2    |      |      |      |      |      | 8    | 8    |      |      |      |      |
| Actuated Green, G (s)     |      | 36.0 |      |      | 36.0 |      |      | 33.0 |      |      |      |      |
| Effective Green, g (s)    |      | 35.0 |      |      | 35.0 |      |      | 32.0 |      |      |      |      |
| Actuated g/C Ratio        |      | 0.47 |      |      | 0.47 |      |      | 0.43 |      |      |      |      |
| Clearance Time (s)        |      | 3.0  |      |      | 3.0  |      |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)        |      | 507  |      |      | 766  |      |      | 1424 |      |      |      |      |
| v/s Ratio Prot            |      |      |      |      | 0.27 |      |      |      |      |      |      |      |
| v/s Ratio Perm            |      | 0.50 |      |      |      |      |      | 0.44 |      |      |      |      |
| v/c Ratio                 |      | 1.07 |      |      | 0.58 |      |      | 1.03 |      |      |      |      |
| Uniform Delay, d1         |      | 20.0 |      |      | 14.6 |      |      | 21.5 |      |      |      |      |
| Progression Factor        |      | 1.00 |      |      | 1.00 |      |      | 1.00 |      |      |      |      |
| Incremental Delay, d2     |      | 60.3 |      |      | 3.1  |      |      | 33.3 |      |      |      |      |
| Delay (s)                 |      | 80.3 |      |      | 17.7 |      |      | 54.8 |      |      |      |      |
| Level of Service          |      | F    |      |      | B    |      |      | D    |      |      |      |      |
| Approach Delay (s)        |      | 80.3 |      |      | 17.7 |      |      | 54.8 |      |      | 0.0  |      |
| Approach LOS              |      | F    |      |      | B    |      |      | D    |      |      | A    |      |

**Intersection Summary**

|                                   |        |                      |     |
|-----------------------------------|--------|----------------------|-----|
| HCM Average Control Delay         | 53.7   | HCM Level of Service | D   |
| HCM Volume to Capacity ratio      | 1.05   |                      |     |
| Actuated Cycle Length (s)         | 75.0   | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 104.3% | ICU Level of Service | G   |
| Analysis Period (min)             | 15     |                      |     |
| c Critical Lane Group             |        |                      |     |

HCM Signalized Intersection Capacity Analysis  
 2012: J Street & 21th Street

6/1/2005



| Movement                          | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT                   | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|-------|------|------|------|------|------|-----------------------|------|------|------|------|
| Lane Configurations               |      | ↑↑↑   |      |      |      |      |      | ↑↑                    |      |      |      |      |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900                  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0   |      |      |      |      |      | 4.0                   |      |      |      |      |
| Lane Util. Factor                 |      | 0.91  |      |      |      |      |      | 0.95                  |      |      |      |      |
| Fr't                              |      | 1.00  |      |      |      |      |      | 0.97                  |      |      |      |      |
| Flt Protected                     |      | 1.00  |      |      |      |      |      | 1.00                  |      |      |      |      |
| Satd. Flow (prot)                 |      | 4906  |      |      |      |      |      | 3274                  |      |      |      |      |
| Flt Permitted                     |      | 1.00  |      |      |      |      |      | 1.00                  |      |      |      |      |
| Satd. Flow (perm)                 |      | 4906  |      |      |      |      |      | 3274                  |      |      |      |      |
| Volume (vph)                      | 79   | 1928  | 0    | 0    | 0    | 0    | 0    | 1261                  | 266  | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00                  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 79   | 1928  | 0    | 0    | 0    | 0    | 0    | 1261                  | 266  | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0    | 7     | 0    | 0    | 0    | 0    | 0    | 1                     | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 0    | 2000  | 0    | 0    | 0    | 0    | 0    | 1526                  | 0    | 0    | 0    | 0    |
| Parking (#/hr)                    | 0    | 0     |      |      |      |      |      | 0                     | 0    |      |      |      |
| Turn Type                         | Perm |       |      |      |      |      |      |                       |      |      |      |      |
| Protected Phases                  |      | 4     |      |      |      |      |      | 2                     |      |      |      |      |
| Permitted Phases                  | 4    |       |      |      |      |      |      |                       |      |      |      |      |
| Actuated Green, G (s)             |      | 25.0  |      |      |      |      |      | 29.0                  |      |      |      |      |
| Effective Green, g (s)            |      | 24.0  |      |      |      |      |      | 28.0                  |      |      |      |      |
| Actuated g/C Ratio                |      | 0.40  |      |      |      |      |      | 0.47                  |      |      |      |      |
| Clearance Time (s)                |      | 3.0   |      |      |      |      |      | 3.0                   |      |      |      |      |
| Lane Grp Cap (vph)                |      | 1962  |      |      |      |      |      | 1528                  |      |      |      |      |
| v/s Ratio Prot                    |      |       |      |      |      |      |      | 0.47                  |      |      |      |      |
| v/s Ratio Perm                    |      | 0.41  |      |      |      |      |      |                       |      |      |      |      |
| v/c Ratio                         |      | 1.02  |      |      |      |      |      | 1.00                  |      |      |      |      |
| Uniform Delay, d1                 |      | 18.0  |      |      |      |      |      | 16.0                  |      |      |      |      |
| Progression Factor                |      | 0.64  |      |      |      |      |      | 0.16                  |      |      |      |      |
| Incremental Delay, d2             |      | 21.1  |      |      |      |      |      | 6.7                   |      |      |      |      |
| Delay (s)                         |      | 32.6  |      |      |      |      |      | 9.3                   |      |      |      |      |
| Level of Service                  |      | C     |      |      |      |      |      | A                     |      |      |      |      |
| Approach Delay (s)                |      | 32.6  |      |      | 0.0  |      |      | 9.3                   |      |      | 0.0  |      |
| Approach LOS                      |      | C     |      |      | A    |      |      | A                     |      |      | A    |      |
| <b>Intersection Summary</b>       |      |       |      |      |      |      |      |                       |      |      |      |      |
| HCM Average Control Delay         |      | 22.6  |      |      |      |      |      | HCM Level of Service  |      |      | C    |      |
| HCM Volume to Capacity ratio      |      | 1.01  |      |      |      |      |      | Sum of lost time (s)  |      |      | 8.0  |      |
| Actuated Cycle Length (s)         |      | 60.0  |      |      |      |      |      | ICU Level of Service  |      |      | E    |      |
| Intersection Capacity Utilization |      | 88.9% |      |      |      |      |      | Analysis Period (min) |      |      | 15   |      |
| c Critical Lane Group             |      |       |      |      |      |      |      |                       |      |      |      |      |

# HCM Signalized Intersection Capacity Analysis

2074: J Street & 19th Street

6/1/2005



| Movement                          | EBL  | EBT   | EBR   | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR                      |
|-----------------------------------|------|-------|-------|------|------|------|------|------|------|------|------|--------------------------|
| Lane Configurations               |      | ↑↑↑   |       |      |      |      |      |      |      |      | ↑↑   |                          |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900                     |
| Total Lost time (s)               |      | 4.0   |       |      |      |      |      |      |      |      | 4.0  |                          |
| Lane Util. Factor                 |      | 0.91  |       |      |      |      |      |      |      |      | 0.95 |                          |
| Fr <sub>t</sub>                   |      | 0.96  |       |      |      |      |      |      |      |      | 1.00 |                          |
| Fl <sub>t</sub> Protected         |      | 1.00  |       |      |      |      |      |      |      |      | 0.98 |                          |
| Satd. Flow (prot)                 |      | 4738  |       |      |      |      |      |      |      |      | 3306 |                          |
| Fl <sub>t</sub> Permitted         |      | 1.00  |       |      |      |      |      |      |      |      | 0.98 |                          |
| Satd. Flow (perm)                 |      | 4738  |       |      |      |      |      |      |      |      | 3306 |                          |
| Volume (vph)                      | 0    | 1739  | 553   | 0    | 0    | 0    | 0    | 0    | 0    | 201  | 395  | 0                        |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00                     |
| Adj. Flow (vph)                   | 0    | 1739  | 553   | 0    | 0    | 0    | 0    | 0    | 0    | 201  | 395  | 0                        |
| RTOR Reduction (vph)              | 0    | 73    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 14   | 0                        |
| Lane Group Flow (vph)             | 0    | 2219  | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 582  | 0                        |
| Parking (#/hr)                    |      | 0     | 0     |      |      |      |      |      |      | 0    | 0    |                          |
| Turn Type                         |      |       |       |      |      |      |      |      |      | Perm |      |                          |
| Protected Phases                  |      | 4     |       |      |      |      |      |      |      |      | 6    |                          |
| Permitted Phases                  |      |       |       |      |      |      |      |      |      | 6    |      |                          |
| Actuated Green, G (s)             |      | 36.0  |       |      |      |      |      |      |      |      | 18.0 |                          |
| Effective Green, g (s)            |      | 35.0  |       |      |      |      |      |      |      |      | 17.0 |                          |
| Actuated g/C Ratio                |      | 0.58  |       |      |      |      |      |      |      |      | 0.28 |                          |
| Clearance Time (s)                |      | 3.0   |       |      |      |      |      |      |      |      | 3.0  |                          |
| Lane Grp Cap (vph)                |      | 2764  |       |      |      |      |      |      |      |      | 937  |                          |
| v/s Ratio Prot                    |      | c0.47 |       |      |      |      |      |      |      |      |      |                          |
| v/s Ratio Perm                    |      |       |       |      |      |      |      |      |      |      | 0.18 |                          |
| v/c Ratio                         |      | 0.80  |       |      |      |      |      |      |      |      | 0.62 |                          |
| Uniform Delay, d <sub>1</sub>     |      | 9.8   |       |      |      |      |      |      |      |      | 18.7 |                          |
| Progression Factor                |      | 1.00  |       |      |      |      |      |      |      |      | 1.00 |                          |
| Incremental Delay, d <sub>2</sub> |      | 2.6   |       |      |      |      |      |      |      |      | 3.1  |                          |
| Delay (s)                         |      | 12.4  |       |      |      |      |      |      |      |      | 21.8 |                          |
| Level of Service                  |      | B     |       |      |      |      |      |      |      |      | C    |                          |
| Approach Delay (s)                |      | 12.4  |       |      | 0.0  |      |      | 0.0  |      |      | 21.8 |                          |
| Approach LOS                      |      | B     |       |      | A    |      |      | A    |      |      | C    |                          |
| <b>Intersection Summary</b>       |      |       |       |      |      |      |      |      |      |      |      |                          |
| HCM Average Control Delay         |      |       | 14.3  |      |      |      |      |      |      |      |      | HCM Level of Service B   |
| HCM Volume to Capacity ratio      |      |       | 0.74  |      |      |      |      |      |      |      |      |                          |
| Actuated Cycle Length (s)         |      |       | 60.0  |      |      |      |      |      |      |      |      | Sum of lost time (s) 8.0 |
| Intersection Capacity Utilization |      |       | 69.4% |      |      |      |      |      |      |      |      | ICU Level of Service C   |
| Analysis Period (min)             |      |       | 15    |      |      |      |      |      |      |      |      |                          |
| c Critical Lane Group             |      |       |       |      |      |      |      |      |      |      |      |                          |

HCM Signalized Intersection Capacity Analysis  
 2088: L Street & 29th Street

6/1/2005



| Movement                          | EBL  | EBT  | EBR    | WBL  | WBT  | WBR                  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|-----------------------------------|------|------|--------|------|------|----------------------|------|------|------|------|-------|------|
| Lane Configurations               |      |      | ↗      | ↖    | ↑    |                      |      |      |      |      | ↑↑↑   |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900   | 1900 | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)               |      |      | 4.0    | 4.0  | 4.0  |                      |      |      |      |      | 4.0   |      |
| Lane Util. Factor                 |      |      | 1.00   | 1.00 | 1.00 |                      |      |      |      |      | 0.91  |      |
| Frt                               |      |      | 0.86   | 1.00 | 1.00 |                      |      |      |      |      | 0.99  |      |
| Flt Protected                     |      |      | 1.00   | 0.95 | 1.00 |                      |      |      |      |      | 1.00  |      |
| Satd. Flow (prot)                 |      |      | 1450   | 1770 | 1863 |                      |      |      |      |      | 4865  |      |
| Flt Permitted                     |      |      | 1.00   | 0.95 | 1.00 |                      |      |      |      |      | 1.00  |      |
| Satd. Flow (perm)                 |      |      | 1450   | 1770 | 1863 |                      |      |      |      |      | 4865  |      |
| Volume (vph)                      | 0    | 0    | 504    | 253  | 459  | 0                    | 0    | 0    | 0    | 0    | 1419  | 105  |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00   | 1.00 | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 504    | 253  | 459  | 0                    | 0    | 0    | 0    | 0    | 1419  | 105  |
| RTOR Reduction (vph)              | 0    | 0    | 4      | 4    | 0    | 0                    | 0    | 0    | 0    | 0    | 10    | 0    |
| Lane Group Flow (vph)             | 0    | 0    | 500    | 249  | 459  | 0                    | 0    | 0    | 0    | 0    | 1514  | 0    |
| Parking (#/hr)                    |      |      | 0      |      |      |                      |      |      |      |      | 0     | 0    |
| Turn Type                         |      |      | custom | Perm |      |                      |      |      |      |      |       |      |
| Protected Phases                  |      |      |        |      | 8    |                      |      |      |      |      | 6     |      |
| Permitted Phases                  |      |      | 4      | 8    |      |                      |      |      |      |      |       |      |
| Actuated Green, G (s)             |      |      | 41.0   | 41.0 | 41.0 |                      |      |      |      |      | 33.0  |      |
| Effective Green, g (s)            |      |      | 40.0   | 40.0 | 40.0 |                      |      |      |      |      | 32.0  |      |
| Actuated g/C Ratio                |      |      | 0.50   | 0.50 | 0.50 |                      |      |      |      |      | 0.40  |      |
| Clearance Time (s)                |      |      | 3.0    | 3.0  | 3.0  |                      |      |      |      |      | 3.0   |      |
| Lane Grp Cap (vph)                |      |      | 725    | 885  | 932  |                      |      |      |      |      | 1946  |      |
| v/s Ratio Prot                    |      |      |        |      | 0.25 |                      |      |      |      |      | c0.31 |      |
| v/s Ratio Perm                    |      |      | c0.34  | 0.14 |      |                      |      |      |      |      |       |      |
| v/c Ratio                         |      |      | 0.69   | 0.28 | 0.49 |                      |      |      |      |      | 0.78  |      |
| Uniform Delay, d1                 |      |      | 15.3   | 11.6 | 13.3 |                      |      |      |      |      | 20.9  |      |
| Progression Factor                |      |      | 0.68   | 0.41 | 0.54 |                      |      |      |      |      | 0.72  |      |
| Incremental Delay, d2             |      |      | 3.7    | 0.8  | 1.8  |                      |      |      |      |      | 2.3   |      |
| Delay (s)                         |      |      | 14.1   | 5.6  | 8.9  |                      |      |      |      |      | 17.3  |      |
| Level of Service                  |      |      | B      | A    | A    |                      |      |      |      |      | B     |      |
| Approach Delay (s)                |      | 14.1 |        |      | 7.7  |                      | 0.0  |      |      |      | 17.3  |      |
| Approach LOS                      |      | B    |        |      | A    |                      | A    |      |      |      | B     |      |
| <b>Intersection Summary</b>       |      |      |        |      |      |                      |      |      |      |      |       |      |
| HCM Average Control Delay         |      |      | 14.2   |      |      | HCM Level of Service |      |      |      |      | B     |      |
| HCM Volume to Capacity ratio      |      |      | 0.73   |      |      |                      |      |      |      |      |       |      |
| Actuated Cycle Length (s)         |      |      | 80.0   |      |      | Sum of lost time (s) |      |      |      | 8.0  |       |      |
| Intersection Capacity Utilization |      |      | 85.0%  |      |      | ICU Level of Service |      |      |      |      | E     |      |
| Analysis Period (min)             |      |      | 15     |      |      |                      |      |      |      |      |       |      |
| c Critical Lane Group             |      |      |        |      |      |                      |      |      |      |      |       |      |



# HCM Signalized Intersection Capacity Analysis

2239: L Street & Alhambra

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      |      | ↕    |      |      | ↕    |      |      | ↕    | ↕    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      |      | 4.0  |      |      | 4.0  | 4.0  |
| Lane Util. Factor      |      |      |      |      | 1.00 |      |      | 1.00 |      |      | 1.00 | 1.00 |
| Frt                    |      |      |      |      | 0.97 |      |      | 0.97 |      |      | 1.00 | 0.85 |
| Flt Protected          |      |      |      |      | 0.99 |      |      | 0.99 |      |      | 1.00 | 1.00 |
| Satd. Flow (prot)      |      |      |      |      | 1614 |      |      | 1621 |      |      | 1858 | 1425 |
| Flt Permitted          |      |      |      |      | 0.99 |      |      | 0.74 |      |      | 0.95 | 1.00 |
| Satd. Flow (perm)      |      |      |      |      | 1614 |      |      | 1202 |      |      | 1764 | 1425 |
| Volume (vph)           | 0    | 0    | 0    | 71   | 167  | 56   | 78   | 522  | 158  | 42   | 845  | 216  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 71   | 167  | 56   | 78   | 522  | 158  | 42   | 845  | 216  |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 10   | 0    | 0    | 12   | 0    | 0    | 0    | 68   |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 284  | 0    | 0    | 746  | 0    | 0    | 887  | 149  |
| Parking (#/hr)         |      |      |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Turn Type              |      |      |      | Perm |      | Perm |      | Perm |      | Perm |      | Perm |
| Protected Phases       |      |      |      |      | 8    |      |      | 2    |      |      | 6    |      |
| Permitted Phases       |      |      |      | 8    |      | 2    |      |      | 6    |      |      | 6    |
| Actuated Green, G (s)  |      |      |      |      | 18.0 |      |      | 56.0 |      |      | 56.0 | 56.0 |
| Effective Green, g (s) |      |      |      |      | 17.0 |      |      | 55.0 |      |      | 55.0 | 55.0 |
| Actuated g/C Ratio     |      |      |      |      | 0.21 |      |      | 0.69 |      |      | 0.69 | 0.69 |
| Clearance Time (s)     |      |      |      |      | 3.0  |      |      | 3.0  |      |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |      |      |      |      | 343  |      |      | 826  |      |      | 1213 | 980  |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      |      |      | 0.18 |      |      | 0.62 |      |      | 0.50 | 0.10 |
| v/c Ratio              |      |      |      |      | 0.83 |      |      | 0.90 |      |      | 0.73 | 0.15 |
| Uniform Delay, d1      |      |      |      |      | 30.1 |      |      | 10.3 |      |      | 7.9  | 4.4  |
| Progression Factor     |      |      |      |      | 1.00 |      |      | 0.88 |      |      | 0.66 | 0.05 |
| Incremental Delay, d2  |      |      |      |      | 20.0 |      |      | 9.2  |      |      | 3.3  | 0.3  |
| Delay (s)              |      |      |      |      | 50.1 |      |      | 18.4 |      |      | 8.5  | 0.5  |
| Level of Service       |      |      |      |      | D    |      |      | B    |      |      | A    | A    |
| Approach Delay (s)     |      | 0.0  |      |      | 50.1 |      |      | 18.4 |      |      | 6.9  |      |
| Approach LOS           |      | A    |      |      | D    |      |      | B    |      |      | A    |      |

| Intersection Summary              |        |                      |     |
|-----------------------------------|--------|----------------------|-----|
| HCM Average Control Delay         | 16.8   | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.89   |                      |     |
| Actuated Cycle Length (s)         | 80.0   | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 114.3% | ICU Level of Service | H   |
| Analysis Period (min)             | 15     |                      |     |
| c Critical Lane Group             |        |                      |     |

# HCM Signalized Intersection Capacity Analysis

3426: L Street & 19th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↕    |      |      | ↕     |      |      |      |      |      | ↕↕   |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      |      | 4.0   |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00 |      |      | 1.00  |      |      |      |      |      | 0.95 |      |
| Frt                    |      | 0.97 |      |      | 1.00  |      |      |      |      |      | 1.00 |      |
| Flt Protected          |      | 1.00 |      |      | 0.99  |      |      |      |      |      | 0.99 |      |
| Satd. Flow (prot)      |      | 1631 |      |      | 1656  |      |      |      |      |      | 3308 |      |
| Flt Permitted          |      | 1.00 |      |      | 0.86  |      |      |      |      |      | 0.99 |      |
| Satd. Flow (perm)      |      | 1631 |      |      | 1439  |      |      |      |      |      | 3308 |      |
| Volume (vph)           | 0    | 198  | 50   | 119  | 365   | 0    | 0    | 0    | 0    | 327  | 776  | 14   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 198  | 50   | 119  | 365   | 0    | 0    | 0    | 0    | 327  | 776  | 14   |
| RTOR Reduction (vph)   | 0    | 15   | 0    | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 2    | 0    |
| Lane Group Flow (vph)  | 0    | 233  | 0    | 0    | 484   | 0    | 0    | 0    | 0    | 0    | 1115 | 0    |
| Parking (#/hr)         |      | 0    | 0    | 0    | 0     |      |      |      |      | 0    | 0    | 0    |
| Turn Type              |      |      |      | Perm |       |      |      |      |      |      | Perm |      |
| Protected Phases       |      | 2    |      |      | 6     |      |      |      |      |      | 4    |      |
| Permitted Phases       |      |      |      | 6    |       | 6    |      |      |      | 4    | 4    |      |
| Actuated Green, G (s)  |      | 27.0 |      |      | 27.0  |      |      |      |      |      | 27.0 |      |
| Effective Green, g (s) |      | 26.0 |      |      | 26.0  |      |      |      |      |      | 26.0 |      |
| Actuated g/C Ratio     |      | 0.43 |      |      | 0.43  |      |      |      |      |      | 0.43 |      |
| Clearance Time (s)     |      | 3.0  |      |      | 3.0   |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 707  |      |      | 624   |      |      |      |      |      | 1433 |      |
| v/s Ratio Prot         |      | 0.14 |      |      |       |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      |      |      | c0.34 |      |      |      |      |      | 0.34 |      |
| v/c Ratio              |      | 0.33 |      |      | 0.78  |      |      |      |      |      | 0.78 |      |
| Uniform Delay, d1      |      | 11.2 |      |      | 14.5  |      |      |      |      |      | 14.5 |      |
| Progression Factor     |      | 1.00 |      |      | 0.62  |      |      |      |      |      | 0.82 |      |
| Incremental Delay, d2  |      | 1.2  |      |      | 7.3   |      |      |      |      |      | 3.3  |      |
| Delay (s)              |      | 12.5 |      |      | 16.3  |      |      |      |      |      | 15.2 |      |
| Level of Service       |      | B    |      |      | B     |      |      |      |      |      | B    |      |
| Approach Delay (s)     |      | 12.5 |      |      | 16.3  |      |      | 0.0  |      |      | 15.2 |      |
| Approach LOS           |      | B    |      |      | B     |      |      | A    |      |      | B    |      |

## Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 15.2  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.78  |                      |     |
| Actuated Cycle Length (s)         | 60.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 80.6% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

# HCM Signalized Intersection Capacity Analysis

3427: L Street & 26th Street

6/1/2005



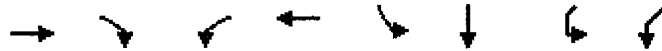
| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|-------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations    |      | ↕     |      |      | ↕    |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      | 4.0  |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00  |      |      | 1.00 |      |      | 1.00  |      |      | 1.00 |      |
| Frt                    |      | 1.00  |      |      | 0.99 |      |      | 1.00  |      |      | 0.97 |      |
| Flt Protected          |      | 1.00  |      |      | 1.00 |      |      | 0.98  |      |      | 0.99 |      |
| Satd. Flow (prot)      |      | 1674  |      |      | 1650 |      |      | 1649  |      |      | 1612 |      |
| Flt Permitted          |      | 1.00  |      |      | 0.97 |      |      | 0.91  |      |      | 0.98 |      |
| Satd. Flow (perm)      |      | 1672  |      |      | 1605 |      |      | 1532  |      |      | 1589 |      |
| Volume (vph)           | 4    | 478   | 4    | 14   | 175  | 19   | 27   | 53    | 0    | 9    | 58   | 22   |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 4    | 478   | 4    | 14   | 175  | 19   | 27   | 53    | 0    | 9    | 58   | 22   |
| RTOR Reduction (vph)   | 0    | 0     | 0    | 0    | 6    | 0    | 0    | 0     | 0    | 0    | 15   | 0    |
| Lane Group Flow (vph)  | 0    | 486   | 0    | 0    | 202  | 0    | 0    | 80    | 0    | 0    | 74   | 0    |
| Parking (#/hr)         | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |       |      | Perm |      |      | Perm |       |      | Perm |      |      |
| Protected Phases       |      | 4     |      |      | 8    |      |      | 2     |      |      | 6    |      |
| Permitted Phases       | 4    |       |      | 8    |      |      | 2    |       |      | 6    |      |      |
| Actuated Green, G (s)  |      | 34.0  |      |      | 34.0 |      |      | 20.0  |      |      | 20.0 |      |
| Effective Green, g (s) |      | 33.0  |      |      | 33.0 |      |      | 19.0  |      |      | 19.0 |      |
| Actuated g/C Ratio     |      | 0.55  |      |      | 0.55 |      |      | 0.32  |      |      | 0.32 |      |
| Clearance Time (s)     |      | 3.0   |      |      | 3.0  |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 920   |      |      | 883  |      |      | 485   |      |      | 503  |      |
| v/s Ratio Prot         |      |       |      |      |      |      |      |       |      |      |      |      |
| v/s Ratio Perm         |      | c0.29 |      |      | 0.13 |      |      | c0.05 |      |      | 0.05 |      |
| v/c Ratio              |      | 0.53  |      |      | 0.23 |      |      | 0.16  |      |      | 0.15 |      |
| Uniform Delay, d1      |      | 8.6   |      |      | 7.0  |      |      | 14.8  |      |      | 14.7 |      |
| Progression Factor     |      | 0.26  |      |      | 1.00 |      |      | 0.68  |      |      | 1.00 |      |
| Incremental Delay, d2  |      | 0.7   |      |      | 0.6  |      |      | 0.7   |      |      | 0.6  |      |
| Delay (s)              |      | 2.9   |      |      | 7.6  |      |      | 10.8  |      |      | 15.3 |      |
| Level of Service       |      | A     |      |      | A    |      |      | B     |      |      | B    |      |
| Approach Delay (s)     |      | 2.9   |      |      | 7.6  |      |      | 10.8  |      |      | 15.3 |      |
| Approach LOS           |      | A     |      |      | A    |      |      | B     |      |      | B    |      |

## Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 6.0   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.40  |                      |     |
| Actuated Cycle Length (s)         | 60.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 43.3% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3428: J Street & 29th St off ramp

6/1/2005



| Movement               | EBT  | EBR   | WBL   | WBT   | SBL   | SBT   | SWL2  | SWL   |
|------------------------|------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations    | ↑↑   | ↑     |       | ↑     |       | ↑↑↑   |       | ↑↑    |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  |
| Total Lost time (s)    | 4.0  | 4.0   |       | 4.0   |       | 4.0   |       | 4.0   |
| Lane Util. Factor      | 0.95 | 1.00  |       | 1.00  |       | 0.91  |       | 0.97  |
| Frt                    | 1.00 | 0.85  |       | 1.00  |       | 1.00  |       | 1.00  |
| Flt Protected          | 1.00 | 1.00  |       | 0.95  |       | 0.99  |       | 0.95  |
| Satd. Flow (prot)      | 3539 | 1425  |       | 1770  |       | 4870  |       | 3433  |
| Flt Permitted          | 1.00 | 1.00  |       | 0.95  |       | 0.99  |       | 0.95  |
| Satd. Flow (perm)      | 3539 | 1425  |       | 1770  |       | 4870  |       | 3433  |
| Volume (vph)           | 1305 | 610   | 141   | 0     | 82    | 358   | 104   | 433   |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)        | 1305 | 610   | 141   | 0     | 82    | 358   | 104   | 433   |
| RTOR Reduction (vph)   | 0    | 37    | 0     | 0     | 0     | 0     | 0     | 0     |
| Lane Group Flow (vph)  | 1305 | 573   | 0     | 141   | 0     | 440   | 0     | 537   |
| Parking (#/hr)         |      | 0     |       |       |       | 0     |       |       |
| Turn Type              |      | Perm  | Split |       | Split |       | Split |       |
| Protected Phases       | 4    |       | 8     | 8     | 6     | 6     | 2     | 2     |
| Permitted Phases       |      | 4     |       |       |       |       |       |       |
| Actuated Green, G (s)  | 34.0 | 34.0  |       | 8.0   |       | 9.0   |       | 17.0  |
| Effective Green, g (s) | 33.0 | 33.0  |       | 7.0   |       | 8.0   |       | 16.0  |
| Actuated g/C Ratio     | 0.41 | 0.41  |       | 0.09  |       | 0.10  |       | 0.20  |
| Clearance Time (s)     | 3.0  | 3.0   |       | 3.0   |       | 3.0   |       | 3.0   |
| Lane Grp Cap (vph)     | 1460 | 588   |       | 155   |       | 487   |       | 687   |
| v/s Ratio Prot         | 0.37 |       |       | c0.08 |       | c0.09 |       | c0.16 |
| v/s Ratio Perm         |      | c0.40 |       |       |       |       |       |       |
| v/c Ratio              | 0.89 | 0.97  |       | 0.91  |       | 0.90  |       | 0.78  |
| Uniform Delay, d1      | 21.9 | 23.1  |       | 36.2  |       | 35.6  |       | 30.3  |
| Progression Factor     | 0.50 | 0.22  |       | 0.85  |       | 1.00  |       | 1.00  |
| Incremental Delay, d2  | 6.0  | 23.7  |       | 36.3  |       | 22.7  |       | 8.6   |
| Delay (s)              | 16.9 | 28.8  |       | 66.9  |       | 58.3  |       | 39.0  |
| Level of Service       | B    | C     |       | E     |       | E     |       | D     |
| Approach Delay (s)     | 20.7 |       |       | 66.9  |       | 58.3  |       | 39.0  |
| Approach LOS           | C    |       |       | E     |       | E     |       | D     |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 31.5  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.91  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 16.0 |
| Intersection Capacity Utilization | 81.1% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

# HCM Signalized Intersection Capacity Analysis

3429: J Street & Alhambra

6/1/2005



| Movement                  | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|---------------------------|-------|-------|------|-------|-------|------|------|------|------|------|-------|------|
| Lane Configurations       |       | ↕↕    |      | ↖     | ↖     | ↗    |      | ↕↕   |      |      | ↕↕    |      |
| Ideal Flow (vphpl)        | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)       |       | 4.0   |      | 4.0   | 4.0   | 4.0  |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor         |       | 0.95  |      | 0.95  | 0.95  | 1.00 |      | 0.95 |      |      | 0.95  |      |
| Fr <sub>t</sub>           |       | 0.97  |      | 1.00  | 1.00  | 0.85 |      | 0.93 |      |      | 1.00  |      |
| Fl <sub>t</sub> Protected |       | 0.99  |      | 0.95  | 1.00  | 1.00 |      | 1.00 |      |      | 0.99  |      |
| Satd. Flow (prot)         |       | 3239  |      | 1681  | 1770  | 1425 |      | 3114 |      |      | 3342  |      |
| Fl <sub>t</sub> Permitted |       | 0.99  |      | 0.95  | 1.00  | 1.00 |      | 1.00 |      |      | 0.71  |      |
| Satd. Flow (perm)         |       | 3239  |      | 1681  | 1770  | 1425 |      | 3114 |      |      | 2402  |      |
| Volume (vph)              | 158   | 804   | 243  | 407   | 436   | 122  | 0    | 296  | 286  | 52   | 379   | 0    |
| Peak-hour factor, PHF     | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)           | 158   | 804   | 243  | 407   | 436   | 122  | 0    | 296  | 286  | 52   | 379   | 0    |
| RTOR Reduction (vph)      | 0     | 28    | 0    | 0     | 0     | 92   | 0    | 218  | 0    | 0    | 0     | 0    |
| Lane Group Flow (vph)     | 0     | 1177  | 0    | 407   | 436   | 31   | 0    | 364  | 0    | 0    | 431   | 0    |
| Parking (#/hr)            |       | 0     | 0    |       |       | 0    |      | 0    | 0    |      | 0     |      |
| Turn Type                 | Split |       |      | Split |       | Perm | Perm |      |      | Perm |       |      |
| Protected Phases          | 4     | 4     |      | 8     | 8     |      |      | 2    |      |      |       | 6    |
| Permitted Phases          |       |       |      |       |       | 8    | 2    |      |      | 6    |       |      |
| Actuated Green, G (s)     |       | 31.0  |      | 21.0  | 21.0  | 21.0 |      | 19.0 |      |      | 19.0  |      |
| Effective Green, g (s)    |       | 30.0  |      | 20.0  | 20.0  | 20.0 |      | 18.0 |      |      | 18.0  |      |
| Actuated g/C Ratio        |       | 0.38  |      | 0.25  | 0.25  | 0.25 |      | 0.22 |      |      | 0.22  |      |
| Clearance Time (s)        |       | 3.0   |      | 3.0   | 3.0   | 3.0  |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)        |       | 1215  |      | 420   | 443   | 356  |      | 701  |      |      | 540   |      |
| v/s Ratio Prot            |       | c0.36 |      | 0.24  | c0.25 |      |      | 0.12 |      |      |       |      |
| v/s Ratio Perm            |       |       |      |       |       | 0.02 |      |      |      |      | c0.18 |      |
| v/c Ratio                 |       | 0.97  |      | 0.97  | 0.98  | 0.09 |      | 0.52 |      |      | 0.80  |      |
| Uniform Delay, d1         |       | 24.5  |      | 29.7  | 29.8  | 23.0 |      | 27.2 |      |      | 29.3  |      |
| Progression Factor        |       | 0.41  |      | 1.00  | 1.00  | 1.00 |      | 0.74 |      |      | 1.00  |      |
| Incremental Delay, d2     |       | 18.4  |      | 36.8  | 39.0  | 0.5  |      | 2.5  |      |      | 11.7  |      |
| Delay (s)                 |       | 28.3  |      | 66.5  | 68.9  | 23.5 |      | 22.6 |      |      | 41.0  |      |
| Level of Service          |       | C     |      | E     | E     | C    |      | C    |      |      | D     |      |
| Approach Delay (s)        |       | 28.3  |      |       | 62.1  |      |      | 22.6 |      |      | 41.0  |      |
| Approach LOS              |       | C     |      |       | E     |      |      | C    |      |      | D     |      |

## Intersection Summary

|                                   |        |                      |      |
|-----------------------------------|--------|----------------------|------|
| HCM Average Control Delay         | 39.3   | HCM Level of Service | D    |
| HCM Volume to Capacity ratio      | 0.93   |                      |      |
| Actuated Cycle Length (s)         | 80.0   | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 100.2% | ICU Level of Service | G    |
| Analysis Period (min)             | 15     |                      |      |
| c Critical Lane Group             |        |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3435: N Street & 29th Street

6/1/2005



| Movement               | EBT   | EBR  | EBR2 | WBL2  | WBL   | WBT   | SBL2 | SBL   | SBT  | SBR  |
|------------------------|-------|------|------|-------|-------|-------|------|-------|------|------|
| Lane Configurations    | ↔     | ↔    |      |       | ↔     | ↔     |      | ↔     | ↔    |      |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900  | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    | 4.0   | 4.0  |      |       | 4.0   | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor      | 0.95  | 0.95 |      |       | 0.95  | 0.95  |      | 0.97  | 0.95 |      |
| Frt                    | 1.00  | 0.85 |      |       | 1.00  | 1.00  |      | 1.00  | 0.99 |      |
| Flt Protected          | 1.00  | 1.00 |      |       | 0.95  | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)      | 1593  | 1354 |      |       | 1681  | 1770  |      | 3433  | 3339 |      |
| Flt Permitted          | 1.00  | 1.00 |      |       | 0.95  | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)      | 1593  | 1354 |      |       | 1681  | 1770  |      | 3433  | 3339 |      |
| Volume (vph)           | 272   | 5    | 366  | 159   | 157   | 678   | 104  | 1278  | 810  | 40   |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 272   | 5    | 366  | 159   | 157   | 678   | 104  | 1278  | 810  | 40   |
| RTOR Reduction (vph)   | 0     | 238  | 0    | 0     | 0     | 0     | 0    | 0     | 5    | 0    |
| Lane Group Flow (vph)  | 272   | 133  | 0    | 0     | 316   | 678   | 0    | 1382  | 845  | 0    |
| Parking (#/hr)         | 0     | 0    | 0    |       |       |       |      |       | 0    |      |
| Turn Type              |       | Prot |      | Split | Split |       | Perm | Perm  |      |      |
| Protected Phases       | 4     | 4    |      | 8     | 8     | 8     |      |       | 6    |      |
| Permitted Phases       |       |      |      |       |       |       | 6    | 6     |      |      |
| Actuated Green, G (s)  | 17.0  | 17.0 |      |       | 26.0  | 26.0  |      | 28.0  | 28.0 |      |
| Effective Green, g (s) | 16.0  | 16.0 |      |       | 25.0  | 25.0  |      | 27.0  | 27.0 |      |
| Actuated g/C Ratio     | 0.20  | 0.20 |      |       | 0.31  | 0.31  |      | 0.34  | 0.34 |      |
| Clearance Time (s)     | 3.0   | 3.0  |      |       | 3.0   | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     | 319   | 271  |      |       | 525   | 553   |      | 1159  | 1127 |      |
| v/s Ratio Prot         | c0.17 | 0.10 |      |       | 0.19  | c0.38 |      |       | 0.25 |      |
| v/s Ratio Perm         |       |      |      |       |       |       |      | c0.40 |      |      |
| v/c Ratio              | 0.85  | 0.49 |      |       | 0.60  | 1.23  |      | 1.19  | 0.75 |      |
| Uniform Delay, d1      | 30.9  | 28.4 |      |       | 23.3  | 27.5  |      | 26.5  | 23.5 |      |
| Progression Factor     | 0.86  | 0.65 |      |       | 0.75  | 0.78  |      | 0.58  | 0.52 |      |
| Incremental Delay, d2  | 2.8   | 0.6  |      |       | 3.7   | 113.2 |      | 91.2  | 2.4  |      |
| Delay (s)              | 29.3  | 19.0 |      |       | 21.2  | 134.6 |      | 106.5 | 14.7 |      |
| Level of Service       | C     | B    |      |       | C     | F     |      | F     | B    |      |
| Approach Delay (s)     | 23.4  |      |      |       |       | 98.5  |      |       | 71.5 |      |
| Approach LOS           | C     |      |      |       |       | F     |      |       | E    |      |

| Intersection Summary              |        |                      |      |
|-----------------------------------|--------|----------------------|------|
| HCM Average Control Delay         | 70.5   | HCM Level of Service | E    |
| HCM Volume to Capacity ratio      | 1.13   |                      |      |
| Actuated Cycle Length (s)         | 80.0   | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 107.9% | ICU Level of Service | G    |
| Analysis Period (min)             | 15     |                      |      |
| c Critical Lane Group             |        |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3436: Capitol & Alhambra

6/1/2005



| Movement               | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL  | NBT  | NBR  | SBL   | SBT  | SBR  |
|------------------------|-------|-------|------|-------|-------|------|------|------|------|-------|------|------|
| Lane Configurations    |       | ↔     |      |       | ↔     |      | ↗    | ↖    | ↗    | ↖     | ↖    | ↗    |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    |       | 4.0   |      |       | 4.0   |      | 4.0  | 4.0  | 4.0  | 4.0   | 4.0  | 4.0  |
| Lane Util. Factor      |       | 0.95  |      |       | 0.95  |      | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Frt                    |       | 1.00  |      |       | 0.98  |      | 1.00 | 1.00 | 0.85 | 1.00  | 1.00 | 0.85 |
| Flt Protected          |       | 0.99  |      |       | 1.00  |      | 0.95 | 1.00 | 1.00 | 0.95  | 1.00 | 1.00 |
| Satd. Flow (prot)      |       | 3317  |      |       | 3283  |      | 1770 | 1676 | 1425 | 1770  | 1676 | 1425 |
| Flt Permitted          |       | 0.99  |      |       | 1.00  |      | 0.29 | 1.00 | 1.00 | 0.28  | 1.00 | 1.00 |
| Satd. Flow (perm)      |       | 3317  |      |       | 3283  |      | 540  | 1676 | 1425 | 531   | 1676 | 1425 |
| Volume (vph)           | 129   | 415   | 7    | 49    | 677   | 116  | 55   | 537  | 81   | 248   | 531  | 57   |
| Peak-hour factor, PHF  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 129   | 415   | 7    | 49    | 677   | 116  | 55   | 537  | 81   | 248   | 531  | 57   |
| RTOR Reduction (vph)   | 0     | 1     | 0    | 0     | 16    | 0    | 0    | 0    | 34   | 0     | 0    | 24   |
| Lane Group Flow (vph)  | 0     | 550   | 0    | 0     | 826   | 0    | 55   | 537  | 47   | 248   | 531  | 33   |
| Parking (#/hr)         |       | 0     | 0    |       | 0     | 0    |      | 0    | 0    |       | 0    | 0    |
| Turn Type              | Split |       |      | Split |       |      | Perm |      | Perm | Perm  |      | Perm |
| Protected Phases       | 4     | 4     |      | 8     | 8     |      |      | 2    |      |       |      | 6    |
| Permitted Phases       |       |       |      |       |       |      | 2    |      | 2    | 6     |      | 6    |
| Actuated Green, G (s)  |       | 13.0  |      |       | 20.0  |      | 38.0 | 38.0 | 38.0 | 38.0  | 38.0 | 38.0 |
| Effective Green, g (s) |       | 12.0  |      |       | 19.0  |      | 37.0 | 37.0 | 37.0 | 37.0  | 37.0 | 37.0 |
| Actuated g/C Ratio     |       | 0.15  |      |       | 0.24  |      | 0.46 | 0.46 | 0.46 | 0.46  | 0.46 | 0.46 |
| Clearance Time (s)     |       | 3.0   |      |       | 3.0   |      | 3.0  | 3.0  | 3.0  | 3.0   | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |       | 498   |      |       | 780   |      | 250  | 775  | 659  | 246   | 775  | 659  |
| v/s Ratio Prot         |       | c0.17 |      |       | c0.25 |      |      | 0.32 |      |       | 0.32 |      |
| v/s Ratio Perm         |       |       |      |       |       |      | 0.10 |      | 0.03 | c0.47 |      | 0.02 |
| v/c Ratio              |       | 1.10  |      |       | 1.06  |      | 0.22 | 0.69 | 0.07 | 1.01  | 0.69 | 0.05 |
| Uniform Delay, d1      |       | 34.0  |      |       | 30.5  |      | 12.9 | 17.0 | 12.0 | 21.5  | 16.9 | 11.8 |
| Progression Factor     |       | 0.79  |      |       | 1.00  |      | 0.55 | 0.45 | 0.42 | 0.58  | 0.52 | 0.25 |
| Incremental Delay, d2  |       | 71.7  |      |       | 49.0  |      | 1.4  | 3.5  | 0.1  | 48.5  | 3.2  | 0.1  |
| Delay (s)              |       | 98.5  |      |       | 79.5  |      | 8.4  | 11.1 | 5.1  | 61.0  | 12.1 | 3.1  |
| Level of Service       |       | F     |      |       | E     |      | A    | B    | A    | E     | B    | A    |
| Approach Delay (s)     |       | 98.5  |      |       | 79.5  |      |      | 10.2 |      |       | 26.0 |      |
| Approach LOS           |       | F     |      |       | E     |      |      | B    |      |       | C    |      |

**Intersection Summary**

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 51.6  | HCM Level of Service | D    |
| HCM Volume to Capacity ratio      | 1.04  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 94.6% | ICU Level of Service | F    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3437: P Street & P St off ramp

6/1/2005



| Movement               | EBT  | EBR  | WBL  | WBT  | SBL   | SBT  | SBR  | SWL2  | SWL  | SWR  |
|------------------------|------|------|------|------|-------|------|------|-------|------|------|
| Lane Configurations    | ↑    | ↗    | ↖    | ↑    |       | ↔    |      | ↖     | ↗    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    | 4.0  | 4.0  | 4.0  | 4.0  |       | 4.0  |      | 4.0   | 4.0  |      |
| Lane Util. Factor      | 1.00 | 1.00 | 1.00 | 1.00 |       | 0.91 |      | 0.91  | 0.91 |      |
| Frt                    | 1.00 | 0.85 | 1.00 | 1.00 |       | 1.00 |      | 1.00  | 0.98 |      |
| Flt Protected          | 1.00 | 1.00 | 0.95 | 1.00 |       | 0.99 |      | 0.95  | 0.96 |      |
| Satd. Flow (prot)      | 1676 | 1425 | 1593 | 1676 |       | 4843 |      | 1610  | 3174 |      |
| Flt Permitted          | 1.00 | 1.00 | 0.39 | 1.00 |       | 0.99 |      | 0.95  | 0.96 |      |
| Satd. Flow (perm)      | 1676 | 1425 | 656  | 1676 |       | 4843 |      | 1610  | 3174 |      |
| Volume (vph)           | 377  | 202  | 210  | 494  | 267   | 977  | 38   | 259   | 242  | 61   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 377  | 202  | 210  | 494  | 267   | 977  | 38   | 259   | 242  | 61   |
| RTOR Reduction (vph)   | 0    | 32   | 0    | 0    | 0     | 4    | 0    | 0     | 0    | 0    |
| Lane Group Flow (vph)  | 377  | 170  | 210  | 494  | 0     | 1278 | 0    | 190   | 372  | 0    |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0     | 0    | 0    |       |      |      |
| Turn Type              |      | Perm | Perm |      | Split |      |      | Split |      |      |
| Protected Phases       | 4    |      |      | 8    | 6     | 6    |      | 2     | 2    |      |
| Permitted Phases       |      | 4    | 8    |      |       |      |      |       |      |      |
| Actuated Green, G (s)  | 33.0 | 33.0 | 33.0 | 33.0 |       | 25.0 |      | 13.0  | 13.0 |      |
| Effective Green, g (s) | 32.0 | 32.0 | 32.0 | 32.0 |       | 24.0 |      | 12.0  | 12.0 |      |
| Actuated g/C Ratio     | 0.40 | 0.40 | 0.40 | 0.40 |       | 0.30 |      | 0.15  | 0.15 |      |
| Clearance Time (s)     | 3.0  | 3.0  | 3.0  | 3.0  |       | 3.0  |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     | 670  | 570  | 262  | 670  |       | 1453 |      | 242   | 476  |      |
| v/s Ratio Prot         | 0.22 |      |      | 0.29 |       | 0.26 |      | 0.12  | 0.12 |      |
| v/s Ratio Perm         |      | 0.12 | 0.32 |      |       |      |      |       |      |      |
| v/c Ratio              | 0.56 | 0.30 | 0.80 | 0.74 |       | 0.88 |      | 0.79  | 0.78 |      |
| Uniform Delay, d1      | 18.6 | 16.4 | 21.2 | 20.4 |       | 26.6 |      | 32.8  | 32.7 |      |
| Progression Factor     | 1.00 | 1.00 | 0.58 | 0.57 |       | 0.58 |      | 1.00  | 1.00 |      |
| Incremental Delay, d2  | 3.4  | 1.3  | 21.4 | 6.8  |       | 5.5  |      | 22.1  | 12.0 |      |
| Delay (s)              | 22.0 | 17.7 | 33.8 | 18.5 |       | 20.9 |      | 54.9  | 44.8 |      |
| Level of Service       | C    | B    | C    | B    |       | C    |      | D     | D    |      |
| Approach Delay (s)     | 20.5 |      |      | 23.1 |       | 20.9 |      |       | 48.2 |      |
| Approach LOS           | C    |      |      | C    |       | C    |      |       | D    |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 26.2  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.83  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 80.8% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |



HCM Signalized Intersection Capacity Analysis  
 3438: P Street & Alhambra

6/1/2005



| Movement               | EBL  | EBT  | EBR   | WBL  | WBT  | WBR  | NBL   | NBT  | NBR  | SBL   | SBT  | SBR  |
|------------------------|------|------|-------|------|------|------|-------|------|------|-------|------|------|
| Lane Configurations    |      | ↔    |       |      | ↔    | ↗    | ↖     | ↕    |      | ↖     | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |       |      | 4.0  | 4.0  | 4.0   | 4.0  |      | 4.0   | 4.0  |      |
| Lane Util. Factor      |      | 0.95 |       |      | 0.95 | 1.00 | 1.00  | 1.00 |      | 1.00  | 1.00 |      |
| Fr't                   |      | 1.00 |       |      | 1.00 | 0.85 | 1.00  | 0.99 |      | 1.00  | 0.98 |      |
| Flt Protected          |      | 1.00 |       |      | 1.00 | 1.00 | 0.95  | 1.00 |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)      |      | 3539 |       |      | 3527 | 1583 | 1770  | 1850 |      | 1770  | 1819 |      |
| Flt Permitted          |      | 1.00 |       |      | 0.79 | 1.00 | 0.95  | 1.00 |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)      |      | 3539 |       |      | 2808 | 1583 | 1770  | 1850 |      | 1770  | 1819 |      |
| Volume (vph)           | 0    | 781  | 0     | 73   | 958  | 190  | 106   | 397  | 19   | 102   | 427  | 79   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 781  | 0     | 73   | 958  | 190  | 106   | 397  | 19   | 102   | 427  | 79   |
| RTOR Reduction (vph)   | 0    | 0    | 0     | 0    | 0    | 109  | 0     | 2    | 0    | 0     | 9    | 0    |
| Lane Group Flow (vph)  | 0    | 781  | 0     | 0    | 1031 | 81   | 106   | 414  | 0    | 102   | 497  | 0    |
| Turn Type              | Perm |      | Perm  |      | Perm | Prot | Prot  |      |      |       |      |      |
| Protected Phases       | 4    |      | 8     |      | 8    | 5    | 2     | 1    |      | 6     |      |      |
| Permitted Phases       | 4    |      | 8     |      | 8    |      |       |      |      |       |      |      |
| Actuated Green, G (s)  | 35.0 |      | 35.0  |      | 35.0 | 8.0  | 28.0  | 8.0  |      | 28.0  |      |      |
| Effective Green, g (s) | 34.0 |      | 34.0  |      | 34.0 | 7.0  | 27.0  | 7.0  |      | 27.0  |      |      |
| Actuated g/C Ratio     | 0.42 |      | 0.42  |      | 0.42 | 0.09 | 0.34  | 0.09 |      | 0.34  |      |      |
| Clearance Time (s)     | 3.0  |      | 3.0   |      | 3.0  | 3.0  | 3.0   | 3.0  |      | 3.0   |      |      |
| Lane Grp Cap (vph)     | 1504 |      | 1193  |      | 673  | 155  | 624   | 155  |      | 614   |      |      |
| v/s Ratio Prot         | 0.22 |      |       |      |      | 0.06 | c0.22 | 0.06 |      | c0.27 |      |      |
| v/s Ratio Perm         |      |      | c0.37 |      | 0.05 |      |       |      |      |       |      |      |
| v/c Ratio              | 0.52 |      | 0.86  |      | 0.12 | 0.68 | 0.66  | 0.66 |      | 0.81  |      |      |
| Uniform Delay, d1      | 17.0 |      | 20.9  |      | 13.9 | 35.4 | 22.6  | 35.3 |      | 24.2  |      |      |
| Progression Factor     | 0.81 |      | 1.00  |      | 1.00 | 1.00 | 1.00  | 0.66 |      | 0.88  |      |      |
| Incremental Delay, d2  | 0.9  |      | 8.4   |      | 0.4  | 21.8 | 5.5   | 13.1 |      | 7.3   |      |      |
| Delay (s)              | 14.7 |      | 29.3  |      | 14.3 | 57.2 | 28.1  | 36.4 |      | 28.5  |      |      |
| Level of Service       | B    |      | C     |      | B    | E    | C     | D    |      | C     |      |      |
| Approach Delay (s)     | 14.7 |      | 27.0  |      | 34.0 |      | 29.8  |      |      |       |      |      |
| Approach LOS           | B    |      | C     |      | C    |      | C     |      |      |       |      |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 25.6  | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 0.80  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 96.7% | ICU Level of Service | F   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

3444: Q Street & 29th Street

6/1/2005



| Movement                          | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|-------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations               |      | ↑     |      | ↑    | ↑    |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0   |      |      |      |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor                 |      | 1.00  |      |      |      |      |      |      |      |      | 0.91 |      |
| Fr <sub>t</sub>                   |      | 0.98  |      |      |      |      |      |      |      |      | 0.98 |      |
| Fl <sub>t</sub> Protected         |      | 1.00  |      |      |      |      |      |      |      |      | 1.00 |      |
| Satd. Flow (prot)                 |      | 1827  |      |      |      |      |      |      |      |      | 4971 |      |
| Fl <sub>t</sub> Permitted         |      | 1.00  |      |      |      |      |      |      |      |      | 1.00 |      |
| Satd. Flow (perm)                 |      | 1827  |      |      |      |      |      |      |      |      | 4971 |      |
| Volume (vph)                      | 0    | 298   | 49   | 0    | 0    | 0    | 0    | 0    | 0    | 26   | 1450 | 250  |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 298   | 49   | 0    | 0    | 0    | 0    | 0    | 0    | 26   | 1450 | 250  |
| RTOR Reduction (vph)              | 0    | 7     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 29   | 0    |
| Lane Group Flow (vph)             | 0    | 340   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1697 | 0    |
| Turn Type                         |      |       |      | Perm |      |      |      |      |      |      | Perm |      |
| Protected Phases                  |      | 4     |      |      | 8    |      |      |      |      |      |      | 6    |
| Permitted Phases                  |      |       |      | 8    |      |      |      |      |      | 6    |      |      |
| Actuated Green, G (s)             |      | 32.0  |      |      |      |      |      |      |      |      | 42.0 |      |
| Effective Green, g (s)            |      | 31.0  |      |      |      |      |      |      |      |      | 41.0 |      |
| Actuated g/C Ratio                |      | 0.39  |      |      |      |      |      |      |      |      | 0.51 |      |
| Clearance Time (s)                |      | 3.0   |      |      |      |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |      | 708   |      |      |      |      |      |      |      |      | 2548 |      |
| v/s Ratio Prot                    |      | c0.19 |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm                    |      |       |      |      |      |      |      |      |      |      | 0.34 |      |
| v/c Ratio                         |      | 0.48  |      |      |      |      |      |      |      |      | 0.67 |      |
| Uniform Delay, d <sub>1</sub>     |      | 18.4  |      |      |      |      |      |      |      |      | 14.4 |      |
| Progression Factor                |      | 1.00  |      |      |      |      |      |      |      |      | 0.47 |      |
| Incremental Delay, d <sub>2</sub> |      | 2.3   |      |      |      |      |      |      |      |      | 0.9  |      |
| Delay (s)                         |      | 20.8  |      |      |      |      |      |      |      |      | 7.7  |      |
| Level of Service                  |      | C     |      |      |      |      |      |      |      |      | A    |      |
| Approach Delay (s)                |      | 20.8  |      |      | 0.0  |      |      | 0.0  |      |      | 7.7  |      |
| Approach LOS                      |      | C     |      |      | A    |      |      | A    |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 9.9   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.59  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 59.4% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
3467: N Street & Alhambra

6/1/2005



| Movement                  | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|---------------------------|------|-------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations       |      | ↕     |      |      | ↕    |      |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)        | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)       |      | 4.0   |      |      | 4.0  |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor         |      | 1.00  |      |      | 1.00 |      |      | 1.00 |      |      | 1.00  |      |
| Fr <sub>t</sub>           |      | 0.98  |      |      | 0.99 |      |      | 0.99 |      |      | 0.98  |      |
| Fl <sub>t</sub> Protected |      | 0.99  |      |      | 0.99 |      |      | 1.00 |      |      | 1.00  |      |
| Satd. Flow (prot)         |      | 1625  |      |      | 1645 |      |      | 1654 |      |      | 1634  |      |
| Fl <sub>t</sub> Permitted |      | 0.79  |      |      | 0.89 |      |      | 0.98 |      |      | 0.99  |      |
| Satd. Flow (perm)         |      | 1309  |      |      | 1477 |      |      | 1620 |      |      | 1623  |      |
| Volume (vph)              | 114  | 236   | 50   | 59   | 252  | 26   | 18   | 517  | 52   | 9    | 503   | 113  |
| Peak-hour factor, PHF     | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)           | 114  | 236   | 50   | 59   | 252  | 26   | 18   | 517  | 52   | 9    | 503   | 113  |
| RTOR Reduction (vph)      | 0    | 6     | 0    | 0    | 4    | 0    | 0    | 5    | 0    | 0    | 10    | 0    |
| Lane Group Flow (vph)     | 0    | 394   | 0    | 0    | 333  | 0    | 0    | 582  | 0    | 0    | 615   | 0    |
| Parking (#/hr)            | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Turn Type                 | Perm |       | Perm |      | Perm |      | Perm |      | Perm |      | Perm  |      |
| Protected Phases          |      | 4     |      |      | 8    |      |      | 2    |      |      | 6     |      |
| Permitted Phases          | 4    |       |      | 8    |      |      | 2    |      |      | 6    |       |      |
| Actuated Green, G (s)     |      | 34.0  |      |      | 34.0 |      |      | 40.0 |      |      | 40.0  |      |
| Effective Green, g (s)    |      | 33.0  |      |      | 33.0 |      |      | 39.0 |      |      | 39.0  |      |
| Actuated g/C Ratio        |      | 0.41  |      |      | 0.41 |      |      | 0.49 |      |      | 0.49  |      |
| Clearance Time (s)        |      | 3.0   |      |      | 3.0  |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)        |      | 540   |      |      | 609  |      |      | 790  |      |      | 791   |      |
| v/s Ratio Prot            |      |       |      |      |      |      |      |      |      |      |       |      |
| v/s Ratio Perm            |      | c0.30 |      |      | 0.23 |      |      | 0.36 |      |      | c0.38 |      |
| v/c Ratio                 |      | 0.73  |      |      | 0.55 |      |      | 0.74 |      |      | 0.78  |      |
| Uniform Delay, d1         |      | 19.7  |      |      | 17.8 |      |      | 16.4 |      |      | 16.9  |      |
| Progression Factor        |      | 0.59  |      |      | 1.00 |      |      | 0.50 |      |      | 0.44  |      |
| Incremental Delay, d2     |      | 7.1   |      |      | 3.5  |      |      | 5.3  |      |      | 5.5   |      |
| Delay (s)                 |      | 18.7  |      |      | 21.4 |      |      | 13.5 |      |      | 13.0  |      |
| Level of Service          |      | B     |      |      | C    |      |      | B    |      |      | B     |      |
| Approach Delay (s)        |      | 18.7  |      |      | 21.4 |      |      | 13.5 |      |      | 13.0  |      |
| Approach LOS              |      | B     |      |      | C    |      |      | B    |      |      | B     |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 15.8  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.76  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 83.0% | ICU Level of Service | E   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
5802: K Street & 29th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑    | ↗    | ↘    | ↑     |      |      |      |      |      | ↖    | ↗    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  | 4.0  | 4.0   |      |      |      |      |      | 4.0  | 4.0  |
| Lane Util. Factor      |      | 1.00 | 1.00 | 1.00 | 1.00  |      |      |      |      |      | 0.95 | 1.00 |
| Frt                    |      | 1.00 | 0.85 | 1.00 | 1.00  |      |      |      |      |      | 1.00 | 0.85 |
| Flt Protected          |      | 1.00 | 1.00 | 0.95 | 1.00  |      |      |      |      |      | 0.99 | 1.00 |
| Satd. Flow (prot)      |      | 1863 | 1583 | 1770 | 1863  |      |      |      |      |      | 3512 | 1583 |
| Flt Permitted          |      | 1.00 | 1.00 | 0.41 | 1.00  |      |      |      |      |      | 0.99 | 1.00 |
| Satd. Flow (perm)      |      | 1863 | 1583 | 759  | 1863  |      |      |      |      |      | 3512 | 1583 |
| Volume (vph)           | 0    | 378  | 212  | 195  | 482   | 0    | 0    | 0    | 0    | 199  | 1086 | 314  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 378  | 212  | 195  | 482   | 0    | 0    | 0    | 0    | 199  | 1086 | 314  |
| RTOR Reduction (vph)   | 0    | 0    | 29   | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 131  |
| Lane Group Flow (vph)  | 0    | 378  | 183  | 195  | 482   | 0    | 0    | 0    | 0    | 0    | 1285 | 183  |
| Turn Type              |      |      | Perm | Perm |       |      |      |      |      | Perm |      | Perm |
| Protected Phases       |      | 4    |      |      | 8     |      |      |      |      |      | 6    |      |
| Permitted Phases       |      |      | 4    | 8    |       |      |      |      |      | 6    |      | 6    |
| Actuated Green, G (s)  |      | 35.0 | 35.0 | 35.0 | 35.0  |      |      |      |      |      | 39.0 | 39.0 |
| Effective Green, g (s) |      | 34.0 | 34.0 | 34.0 | 34.0  |      |      |      |      |      | 38.0 | 38.0 |
| Actuated g/C Ratio     |      | 0.42 | 0.42 | 0.42 | 0.42  |      |      |      |      |      | 0.48 | 0.48 |
| Clearance Time (s)     |      | 3.0  | 3.0  | 3.0  | 3.0   |      |      |      |      |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |      | 792  | 673  | 323  | 792   |      |      |      |      |      | 1668 | 752  |
| v/s Ratio Prot         |      | 0.20 |      |      | c0.26 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      | 0.12 | 0.26 |       |      |      |      |      |      | 0.37 | 0.12 |
| v/c Ratio              |      | 0.48 | 0.27 | 0.60 | 0.61  |      |      |      |      |      | 0.77 | 0.24 |
| Uniform Delay, d1      |      | 16.6 | 14.9 | 17.8 | 17.8  |      |      |      |      |      | 17.4 | 12.5 |
| Progression Factor     |      | 0.85 | 0.76 | 0.68 | 0.68  |      |      |      |      |      | 0.88 | 0.01 |
| Incremental Delay, d2  |      | 1.9  | 0.9  | 7.0  | 3.0   |      |      |      |      |      | 1.7  | 0.5  |
| Delay (s)              |      | 16.0 | 12.2 | 19.2 | 15.0  |      |      |      |      |      | 17.0 | 0.6  |
| Level of Service       |      | B    | B    | B    | B     |      |      |      |      |      | B    | A    |
| Approach Delay (s)     |      | 14.6 |      |      | 16.2  |      |      | 0.0  |      |      | 13.8 |      |
| Approach LOS           |      | B    |      |      | B     |      |      | A    |      |      | B    |      |

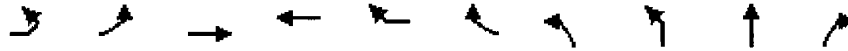
| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 14.5  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.69  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 76.5% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

5848: J Street & 30th Street

6/1/2005



| Movement               | EBL2 | EBL   | EBT  | WBT   | WBR  | WBR2 | NBL2 | NBL   | NBT  | NBR  |
|------------------------|------|-------|------|-------|------|------|------|-------|------|------|
| Lane Configurations    |      | ↔     | ↕    | ↔     |      |      |      | ↔     | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0   | 4.0  | 4.0   |      |      |      | 4.0   | 4.0  |      |
| Lane Util. Factor      |      | 1.00  | 0.95 | 1.00  |      |      |      | 0.91  | 0.91 |      |
| Frt                    |      | 1.00  | 1.00 | 0.90  |      |      |      | 1.00  | 0.98 |      |
| Flt Protected          |      | 0.95  | 1.00 | 1.00  |      |      |      | 0.95  | 0.99 |      |
| Satd. Flow (prot)      |      | 1770  | 3362 | 1503  |      |      |      | 1610  | 3279 |      |
| Flt Permitted          |      | 0.95  | 1.00 | 1.00  |      |      |      | 0.95  | 0.99 |      |
| Satd. Flow (perm)      |      | 1770  | 3362 | 1503  |      |      |      | 1610  | 3279 |      |
| Volume (vph)           | 183  | 194   | 1000 | 104   | 337  | 4    | 37   | 309   | 365  | 90   |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 183  | 194   | 1000 | 104   | 337  | 4    | 37   | 309   | 365  | 90   |
| RTOR Reduction (vph)   | 0    | 0     | 0    | 1     | 0    | 0    | 0    | 0     | 19   | 0    |
| Lane Group Flow (vph)  | 0    | 377   | 1000 | 444   | 0    | 0    | 0    | 259   | 523  | 0    |
| Parking (#/hr)         |      |       | 0    | 0     | 0    | 0    |      |       |      | 0    |
| Turn Type              | Prot | Prot  |      |       |      |      | Perm | Perm  |      |      |
| Protected Phases       | 7    | 7     | 4    | 8     |      |      |      |       | 2    |      |
| Permitted Phases       |      |       |      |       |      |      | 2    | 2     |      |      |
| Actuated Green, G (s)  |      | 22.0  | 55.0 | 30.0  |      |      |      | 19.0  | 19.0 |      |
| Effective Green, g (s) |      | 21.0  | 54.0 | 29.0  |      |      |      | 18.0  | 18.0 |      |
| Actuated g/C Ratio     |      | 0.26  | 0.68 | 0.36  |      |      |      | 0.22  | 0.22 |      |
| Clearance Time (s)     |      | 3.0   | 3.0  | 3.0   |      |      |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     |      | 465   | 2269 | 545   |      |      |      | 362   | 738  |      |
| v/s Ratio Prot         |      | c0.21 | 0.30 | c0.30 |      |      |      |       |      |      |
| v/s Ratio Perm         |      |       |      |       |      |      |      | c0.16 | 0.16 |      |
| v/c Ratio              |      | 0.81  | 0.44 | 0.82  |      |      |      | 0.72  | 0.71 |      |
| Uniform Delay, d1      |      | 27.6  | 6.0  | 23.1  |      |      |      | 28.6  | 28.6 |      |
| Progression Factor     |      | 0.52  | 0.12 | 0.51  |      |      |      | 0.54  | 0.51 |      |
| Incremental Delay, d2  |      | 6.7   | 0.3  | 4.1   |      |      |      | 9.9   | 4.9  |      |
| Delay (s)              |      | 21.2  | 1.0  | 15.8  |      |      |      | 25.3  | 19.6 |      |
| Level of Service       |      | C     | A    | B     |      |      |      | C     | B    |      |
| Approach Delay (s)     |      |       | 6.5  | 15.8  |      |      |      |       | 21.4 |      |
| Approach LOS           |      |       | A    | B     |      |      |      |       | C    |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 12.6  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.79  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 72.7% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis

5849: L Street & 30th Street

6/1/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT                  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|-------|------|----------------------|------|------|-------|------|------|------|------|
| Lane Configurations               |      |      |       |      | ↑↑                   | ↑    | ↑    | ↑↑↑   |      |      |      |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900                 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      |      |       |      | 4.0                  | 4.0  | 4.0  | 4.0   |      |      |      |      |
| Lane Util. Factor                 |      |      |       |      | 0.95                 | 1.00 | 0.86 | 0.86  |      |      |      |      |
| Fr <sub>t</sub>                   |      |      |       |      | 1.00                 | 0.85 | 1.00 | 1.00  |      |      |      |      |
| Fl <sub>t</sub> Protected         |      |      |       |      | 1.00                 | 1.00 | 0.95 | 1.00  |      |      |      |      |
| Satd. Flow (prot)                 |      |      |       |      | 3539                 | 1425 | 1522 | 4646  |      |      |      |      |
| Fl <sub>t</sub> Permitted         |      |      |       |      | 1.00                 | 1.00 | 0.95 | 1.00  |      |      |      |      |
| Satd. Flow (perm)                 |      |      |       |      | 3539                 | 1425 | 1522 | 4646  |      |      |      |      |
| Volume (vph)                      | 0    | 0    | 0     | 0    | 444                  | 82   | 175  | 1272  | 0    | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0     | 0    | 444                  | 82   | 175  | 1272  | 0    | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 0    | 0                    | 29   | 81   | 0     | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 0    | 0    | 0     | 0    | 444                  | 53   | 94   | 1272  | 0    | 0    | 0    | 0    |
| Parking (#/hr)                    |      |      |       |      |                      | 0    |      | 0     |      |      |      |      |
| Turn Type                         |      |      |       |      |                      | Perm | Perm |       |      |      |      |      |
| Protected Phases                  |      |      |       |      | 8                    |      |      | 2     |      |      |      |      |
| Permitted Phases                  |      |      |       |      |                      | 8    | 2    |       |      |      |      |      |
| Actuated Green, G (s)             |      |      |       |      | 30.0                 | 30.0 | 44.0 | 44.0  |      |      |      |      |
| Effective Green, g (s)            |      |      |       |      | 29.0                 | 29.0 | 43.0 | 43.0  |      |      |      |      |
| Actuated g/C Ratio                |      |      |       |      | 0.36                 | 0.36 | 0.54 | 0.54  |      |      |      |      |
| Clearance Time (s)                |      |      |       |      | 3.0                  | 3.0  | 3.0  | 3.0   |      |      |      |      |
| Lane Grp Cap (vph)                |      |      |       |      | 1283                 | 517  | 818  | 2497  |      |      |      |      |
| v/s Ratio Prot                    |      |      |       |      | c0.13                |      |      | c0.27 |      |      |      |      |
| v/s Ratio Perm                    |      |      |       |      |                      | 0.04 | 0.06 |       |      |      |      |      |
| v/c Ratio                         |      |      |       |      | 0.35                 | 0.10 | 0.11 | 0.51  |      |      |      |      |
| Uniform Delay, d1                 |      |      |       |      | 18.6                 | 16.9 | 9.1  | 11.8  |      |      |      |      |
| Progression Factor                |      |      |       |      | 0.85                 | 0.71 | 0.35 | 0.71  |      |      |      |      |
| Incremental Delay, d2             |      |      |       |      | 0.7                  | 0.4  | 0.3  | 0.7   |      |      |      |      |
| Delay (s)                         |      |      |       |      | 16.4                 | 12.3 | 3.5  | 9.1   |      |      |      |      |
| Level of Service                  |      |      |       |      | B                    | B    | A    | A     |      |      |      |      |
| Approach Delay (s)                |      | 0.0  |       |      | 15.8                 |      |      | 8.4   |      |      | 0.0  |      |
| Approach LOS                      |      | A    |       |      | B                    |      |      | A     |      |      | A    |      |
| <b>Intersection Summary</b>       |      |      |       |      |                      |      |      |       |      |      |      |      |
| HCM Average Control Delay         |      |      | 10.4  |      | HCM Level of Service |      |      |       |      |      | B    |      |
| HCM Volume to Capacity ratio      |      |      | 0.44  |      |                      |      |      |       |      |      |      |      |
| Actuated Cycle Length (s)         |      |      | 80.0  |      | Sum of lost time (s) |      |      |       |      |      | 8.0  |      |
| Intersection Capacity Utilization |      |      | 85.0% |      | ICU Level of Service |      |      |       |      |      | E    |      |
| Analysis Period (min)             |      |      | 15    |      |                      |      |      |       |      |      |      |      |
| c Critical Lane Group             |      |      |       |      |                      |      |      |       |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
5880: N Street & 30th Street

6/1/2005



| Movement               | EBL  | EBT  | WBT   | WBR  | NBL  | NBT  | NBR   | NEL2 | NEL    | NER  |
|------------------------|------|------|-------|------|------|------|-------|------|--------|------|
| Lane Configurations    |      |      |       |      |      |      |       |      |        |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 | 1900   | 1900 |
| Total Lost time (s)    | 4.0  | 4.0  | 4.0   |      |      | 4.0  |       |      | 4.0    |      |
| Lane Util. Factor      | 1.00 | 1.00 | 1.00  |      |      | 0.91 |       |      | 0.97   |      |
| Frt                    | 1.00 | 1.00 | 0.98  |      |      | 0.99 |       |      | 0.99   |      |
| Flt Protected          | 0.95 | 1.00 | 1.00  |      |      | 0.99 |       |      | 0.96   |      |
| Satd. Flow (prot)      | 1770 | 1863 | 1643  |      |      | 4791 |       |      | 3414   |      |
| Flt Permitted          | 0.36 | 1.00 | 1.00  |      |      | 0.99 |       |      | 0.96   |      |
| Satd. Flow (perm)      | 664  | 1863 | 1643  |      |      | 4791 |       |      | 3414   |      |
| Volume (vph)           | 58   | 326  | 308   | 54   | 168  | 374  | 45    | 512  | 191    | 59   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00   | 1.00 |
| Adj. Flow (vph)        | 58   | 326  | 308   | 54   | 168  | 374  | 45    | 512  | 191    | 59   |
| RTOR Reduction (vph)   | 0    | 0    | 8     | 0    | 0    | 12   | 0     | 0    | 0      | 0    |
| Lane Group Flow (vph)  | 58   | 326  | 354   | 0    | 0    | 575  | 0     | 0    | 762    | 0    |
| Parking (#/hr)         |      |      | 0     | 0    |      | 0    | 0     |      |        |      |
| Turn Type              | Perm |      |       | Perm |      |      | Split |      |        |      |
| Protected Phases       |      | 4    | 8     |      |      | 2    |       | 6    | 6      |      |
| Permitted Phases       | 4    |      |       |      | 2    |      |       |      |        |      |
| Actuated Green, G (s)  | 28.0 | 28.0 | 28.0  |      |      | 18.0 |       |      | 25.0   |      |
| Effective Green, g (s) | 27.0 | 27.0 | 27.0  |      |      | 17.0 |       |      | 24.0   |      |
| Actuated g/C Ratio     | 0.34 | 0.34 | 0.34  |      |      | 0.21 |       |      | 0.30   |      |
| Clearance Time (s)     | 3.0  | 3.0  | 3.0   |      |      | 3.0  |       |      | 3.0    |      |
| Lane Grp Cap (vph)     | 224  | 629  | 555   |      |      | 1018 |       |      | 1024   |      |
| v/s Ratio Prot         |      | 0.18 | c0.22 |      |      |      |       |      | c0.22  |      |
| v/s Ratio Perm         | 0.09 |      |       |      |      | 0.12 |       |      |        |      |
| v/c Ratio              | 0.26 | 0.52 | 0.64  |      |      | 0.57 |       |      | 0.96dl |      |
| Uniform Delay, d1      | 19.2 | 21.3 | 22.4  |      |      | 28.2 |       |      | 25.2   |      |
| Progression Factor     | 1.46 | 1.45 | 0.57  |      |      | 0.70 |       |      | 1.00   |      |
| Incremental Delay, d2  | 1.0  | 1.1  | 4.3   |      |      | 2.1  |       |      | 4.9    |      |
| Delay (s)              | 29.0 | 32.1 | 17.1  |      |      | 21.8 |       |      | 30.1   |      |
| Level of Service       | C    | C    | B     |      |      | C    |       |      | C      |      |
| Approach Delay (s)     |      | 31.6 | 17.1  |      |      | 21.8 |       |      | 30.1   |      |
| Approach LOS           |      | C    | B     |      |      | C    |       |      | C      |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 25.8  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.66  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 76.2% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 5882: P Street & 30th Street

6/1/2005



| Movement               | EBL  | EBT   | WBT  | WBR  | NBL2 | NBL   | NBT  | NBR  |
|------------------------|------|-------|------|------|------|-------|------|------|
| Lane Configurations    | ↖    | ↑     | ↗    | ↖    | ↖    | ↑     | ↗    | ↗    |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    | 4.0  | 4.0   | 4.0  |      | 4.0  | 4.0   | 4.0  |      |
| Lane Util. Factor      | 1.00 | 1.00  | 0.95 |      | 1.00 | 0.91  | 0.91 |      |
| Frt                    | 1.00 | 1.00  | 1.00 |      | 1.00 | 1.00  | 0.98 |      |
| Flt Protected          | 0.95 | 1.00  | 1.00 |      | 0.95 | 0.95  | 0.99 |      |
| Satd. Flow (prot)      | 1770 | 1863  | 3527 |      | 1593 | 1449  | 3118 |      |
| Flt Permitted          | 0.33 | 1.00  | 1.00 |      | 0.95 | 0.95  | 0.99 |      |
| Satd. Flow (perm)      | 613  | 1863  | 3527 |      | 1593 | 1449  | 3118 |      |
| Volume (vph)           | 159  | 845   | 752  | 17   | 122  | 359   | 285  | 57   |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 159  | 845   | 752  | 17   | 122  | 359   | 285  | 57   |
| RTOR Reduction (vph)   | 0    | 0     | 0    | 0    | 0    | 0     | 13   | 0    |
| Lane Group Flow (vph)  | 159  | 845   | 769  | 0    | 122  | 219   | 469  | 0    |
| Parking (#/hr)         |      |       |      | 0    | 0    | 0     | 0    |      |
| Turn Type              | Perm |       |      |      | Perm | Perm  |      |      |
| Protected Phases       |      | 4     | 8    |      |      |       | 2    |      |
| Permitted Phases       | 4    |       |      |      | 2    | 2     |      |      |
| Actuated Green, G (s)  | 52.0 | 52.0  | 52.0 |      | 22.0 | 22.0  | 22.0 |      |
| Effective Green, g (s) | 51.0 | 51.0  | 51.0 |      | 21.0 | 21.0  | 21.0 |      |
| Actuated g/C Ratio     | 0.64 | 0.64  | 0.64 |      | 0.26 | 0.26  | 0.26 |      |
| Clearance Time (s)     | 3.0  | 3.0   | 3.0  |      | 3.0  | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     | 391  | 1188  | 2248 |      | 418  | 380   | 818  |      |
| v/s Ratio Prot         |      | c0.45 | 0.22 |      |      |       |      |      |
| v/s Ratio Perm         | 0.26 |       |      |      | 0.08 | c0.15 | 0.15 |      |
| v/c Ratio              | 0.41 | 0.71  | 0.34 |      | 0.29 | 0.58  | 0.57 |      |
| Uniform Delay, d1      | 7.1  | 9.6   | 6.7  |      | 23.6 | 25.6  | 25.6 |      |
| Progression Factor     | 0.91 | 0.93  | 0.18 |      | 1.00 | 1.00  | 1.00 |      |
| Incremental Delay, d2  | 2.4  | 2.8   | 0.2  |      | 1.8  | 6.2   | 2.9  |      |
| Delay (s)              | 8.8  | 11.7  | 1.4  |      | 25.3 | 31.9  | 28.5 |      |
| Level of Service       | A    | B     | A    |      | C    | C     | C    |      |
| Approach Delay (s)     |      | 11.3  | 1.4  |      |      |       | 28.9 |      |
| Approach LOS           |      | B     | A    |      |      |       | C    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 14.0  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.67  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 64.6% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
 5886: Capitol & 30th Street

6/1/2005



| Movement               | EBL   | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|-------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    | ↵     | ↕↕   |      |      | ↕↕    |      |      | ↕↕↕  |      |      |      |      |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0   | 4.0  |      |      | 4.0   |      |      | 4.0  |      |      |      |      |
| Lane Util. Factor      | 1.00  | 0.95 |      |      | 0.95  |      |      | 0.91 |      |      |      |      |
| Fr't                   | 1.00  | 1.00 |      |      | 0.99  |      |      | 0.96 |      |      |      |      |
| Flt Protected          | 0.95  | 1.00 |      |      | 1.00  |      |      | 0.99 |      |      |      |      |
| Satd. Flow (prot)      | 1770  | 3539 |      |      | 3489  |      |      | 4854 |      |      |      |      |
| Flt Permitted          | 0.95  | 1.00 |      |      | 1.00  |      |      | 0.99 |      |      |      |      |
| Satd. Flow (perm)      | 1770  | 3539 |      |      | 3489  |      |      | 4854 |      |      |      |      |
| Volume (vph)           | 112   | 401  | 0    | 0    | 467   | 49   | 68   | 372  | 160  | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 112   | 401  | 0    | 0    | 467   | 49   | 68   | 372  | 160  | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0     | 0    | 0    | 0    | 10    | 0    | 0    | 82   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 112   | 401  | 0    | 0    | 506   | 0    | 0    | 518  | 0    | 0    | 0    | 0    |
| Turn Type              | Prot  |      |      |      |       |      | Perm |      |      |      |      |      |
| Protected Phases       | 7     | 4    |      |      | 8     |      |      | 2    |      |      |      |      |
| Permitted Phases       |       |      |      |      |       |      | 2    |      |      |      |      |      |
| Actuated Green, G (s)  | 19.0  | 49.0 |      |      | 27.0  |      |      | 25.0 |      |      |      |      |
| Effective Green, g (s) | 18.0  | 48.0 |      |      | 26.0  |      |      | 24.0 |      |      |      |      |
| Actuated g/C Ratio     | 0.22  | 0.60 |      |      | 0.32  |      |      | 0.30 |      |      |      |      |
| Clearance Time (s)     | 3.0   | 3.0  |      |      | 3.0   |      |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)     | 398   | 2123 |      |      | 1134  |      |      | 1456 |      |      |      |      |
| v/s Ratio Prot         | c0.06 | 0.11 |      |      | c0.14 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |       |      |      |      |       |      |      | 0.11 |      |      |      |      |
| v/c Ratio              | 0.28  | 0.19 |      |      | 0.45  |      |      | 0.36 |      |      |      |      |
| Uniform Delay, d1      | 25.6  | 7.2  |      |      | 21.3  |      |      | 21.9 |      |      |      |      |
| Progression Factor     | 1.13  | 1.57 |      |      | 0.22  |      |      | 0.63 |      |      |      |      |
| Incremental Delay, d2  | 1.5   | 0.2  |      |      | 0.5   |      |      | 0.5  |      |      |      |      |
| Delay (s)              | 30.5  | 11.5 |      |      | 5.2   |      |      | 14.5 |      |      |      |      |
| Level of Service       | C     | B    |      |      | A     |      |      | B    |      |      |      |      |
| Approach Delay (s)     |       | 15.6 |      |      | 5.2   |      |      | 14.5 |      |      | 0.0  |      |
| Approach LOS           |       | B    |      |      | A     |      |      | B    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 11.9  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.37  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 79.8% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
5888: Capitol & 29th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL   | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|-------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑↑   |      | ↖     | ↑↑   |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      | 4.0   | 4.0  |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 0.95 |      | 1.00  | 0.95 |      |      |      |      |      | 0.91 |      |
| Frt                    |      | 0.95 |      | 1.00  | 1.00 |      |      |      |      |      | 0.99 |      |
| Flt Protected          |      | 1.00 |      | 0.95  | 1.00 |      |      |      |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 3211 |      | 1770  | 3539 |      |      |      |      |      | 4860 |      |
| Flt Permitted          |      | 1.00 |      | 0.37  | 1.00 |      |      |      |      |      | 1.00 |      |
| Satd. Flow (perm)      |      | 3211 |      | 681   | 3539 |      |      |      |      |      | 4860 |      |
| Volume (vph)           | 0    | 394  | 169  | 198   | 413  | 0    | 0    | 0    | 0    | 123  | 1930 | 123  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 394  | 169  | 198   | 413  | 0    | 0    | 0    | 0    | 123  | 1930 | 123  |
| RTOR Reduction (vph)   | 0    | 3    | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 8    | 0    |
| Lane Group Flow (vph)  | 0    | 560  | 0    | 198   | 413  | 0    | 0    | 0    | 0    | 0    | 2168 | 0    |
| Parking (#/hr)         |      | 0    | 0    |       |      |      |      |      |      |      | 0    | 0    |
| Turn Type              |      |      |      | Perm  |      |      |      |      |      |      | Perm |      |
| Protected Phases       |      | 4    |      |       | 8    |      |      |      |      |      |      | 6    |
| Permitted Phases       |      |      |      | 8     |      |      |      |      |      | 6    |      |      |
| Actuated Green, G (s)  |      | 33.0 |      | 33.0  | 33.0 |      |      |      |      |      | 41.0 |      |
| Effective Green, g (s) |      | 32.0 |      | 32.0  | 32.0 |      |      |      |      |      | 40.0 |      |
| Actuated g/C Ratio     |      | 0.40 |      | 0.40  | 0.40 |      |      |      |      |      | 0.50 |      |
| Clearance Time (s)     |      | 3.0  |      | 3.0   | 3.0  |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 1284 |      | 272   | 1416 |      |      |      |      |      | 2430 |      |
| v/s Ratio Prot         |      | 0.17 |      |       | 0.12 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      |      | c0.29 |      |      |      |      |      |      | 0.45 |      |
| v/c Ratio              |      | 0.44 |      | 0.73  | 0.29 |      |      |      |      |      | 0.89 |      |
| Uniform Delay, d1      |      | 17.4 |      | 20.3  | 16.3 |      |      |      |      |      | 18.1 |      |
| Progression Factor     |      | 0.88 |      | 0.39  | 0.34 |      |      |      |      |      | 0.61 |      |
| Incremental Delay, d2  |      | 0.6  |      | 14.8  | 0.5  |      |      |      |      |      | 4.0  |      |
| Delay (s)              |      | 15.9 |      | 22.8  | 6.0  |      |      |      |      |      | 14.9 |      |
| Level of Service       |      | B    |      | C     | A    |      |      |      |      |      | B    |      |
| Approach Delay (s)     |      | 15.9 |      |       | 11.5 |      | 0.0  |      |      |      | 14.9 |      |
| Approach LOS           |      | B    |      |       | B    |      | A    |      |      |      | B    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 14.4  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.82  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 79.8% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
5890: Capitol & 26th Street

6/1/2005



| Movement                          | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|-----------------------------------|------|------|------|------|-------|------|------|------|------|------|-------|------|
| Lane Configurations               |      |      |      |      |       |      |      |      |      |      |       |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)               | 4.0  | 4.0  |      | 4.0  | 4.0   |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor                 | 1.00 | 1.00 |      | 1.00 | 1.00  |      |      | 1.00 |      |      | 1.00  |      |
| Fr <sub>t</sub>                   | 1.00 | 1.00 |      | 1.00 | 0.99  |      |      | 0.97 |      |      | 0.98  |      |
| Fl <sub>t</sub> Protected         | 0.95 | 1.00 |      | 0.95 | 1.00  |      |      | 0.99 |      |      | 0.99  |      |
| Satd. Flow (prot)                 | 1770 | 1672 |      | 1770 | 1668  |      |      | 1622 |      |      | 1628  |      |
| Fl <sub>t</sub> Permitted         | 0.29 | 1.00 |      | 0.33 | 1.00  |      |      | 0.97 |      |      | 0.95  |      |
| Satd. Flow (perm)                 | 542  | 1672 |      | 608  | 1668  |      |      | 1580 |      |      | 1556  |      |
| Volume (vph)                      | 11   | 611  | 10   | 18   | 650   | 24   | 11   | 49   | 14   | 20   | 58    | 12   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)                   | 11   | 611  | 10   | 18   | 650   | 24   | 11   | 49   | 14   | 20   | 58    | 12   |
| RTOR Reduction (vph)              | 0    | 1    | 0    | 0    | 2     | 0    | 0    | 10   | 0    | 0    | 9     | 0    |
| Lane Group Flow (vph)             | 11   | 620  | 0    | 18   | 672   | 0    | 0    | 64   | 0    | 0    | 81    | 0    |
| Parking (#/hr)                    |      | 0    | 0    |      | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Turn Type                         | Perm |      |      | Perm |       |      | Perm |      |      | Perm |       |      |
| Protected Phases                  |      | 4    |      |      | 8     |      |      | 2    |      |      | 6     |      |
| Permitted Phases                  | 4    |      |      | 8    |       |      | 2    |      |      | 6    |       |      |
| Actuated Green, G (s)             | 37.0 | 37.0 |      | 37.0 | 37.0  |      |      | 17.0 |      |      | 17.0  |      |
| Effective Green, g (s)            | 36.0 | 36.0 |      | 36.0 | 36.0  |      |      | 16.0 |      |      | 16.0  |      |
| Actuated g/C Ratio                | 0.60 | 0.60 |      | 0.60 | 0.60  |      |      | 0.27 |      |      | 0.27  |      |
| Clearance Time (s)                | 3.0  | 3.0  |      | 3.0  | 3.0   |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)                | 325  | 1003 |      | 365  | 1001  |      |      | 421  |      |      | 415   |      |
| v/s Ratio Prot                    |      | 0.37 |      |      | c0.40 |      |      |      |      |      |       |      |
| v/s Ratio Perm                    | 0.02 |      |      | 0.03 |       |      |      | 0.04 |      |      | c0.05 |      |
| v/c Ratio                         | 0.03 | 0.62 |      | 0.05 | 0.67  |      |      | 0.15 |      |      | 0.20  |      |
| Uniform Delay, d <sub>1</sub>     | 4.9  | 7.6  |      | 4.9  | 8.0   |      |      | 16.8 |      |      | 17.0  |      |
| Progression Factor                | 1.00 | 1.00 |      | 1.00 | 1.00  |      |      | 1.00 |      |      | 0.66  |      |
| Incremental Delay, d <sub>2</sub> | 0.2  | 2.9  |      | 0.3  | 3.6   |      |      | 0.8  |      |      | 1.0   |      |
| Delay (s)                         | 5.1  | 10.5 |      | 5.2  | 11.6  |      |      | 17.6 |      |      | 12.3  |      |
| Level of Service                  | A    | B    |      | A    | B     |      |      | B    |      |      | B     |      |
| Approach Delay (s)                |      | 10.4 |      |      | 11.4  |      |      | 17.6 |      |      | 12.3  |      |
| Approach LOS                      |      | B    |      |      | B     |      |      | B    |      |      | B     |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.4  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.52  |                      |     |
| Actuated Cycle Length (s)         | 60.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 49.9% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
6481: J Street & 28th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT    | WBR  | NBL   | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|--------|------|-------|------|------|------|------|------|
| Lane Configurations    | ↔↑↑↔ |      |      |      |        | ↗    |       | ↖    |      |      | ↖    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900   | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0  |      |      |      |        |      | 4.0   |      |      |      | 4.0  |      |
| Lane Util. Factor      | 0.91 |      |      |      |        |      | 1.00  |      |      |      | 1.00 |      |
| Frt                    | 0.99 |      |      |      |        |      | 0.93  |      |      |      | 1.00 |      |
| Flt Protected          | 1.00 |      |      |      |        |      | 1.00  |      |      |      | 0.99 |      |
| Satd. Flow (prot)      | 4884 |      |      |      |        |      | 1559  |      |      |      | 1662 |      |
| Flt Permitted          | 1.00 |      |      |      |        |      | 1.00  |      |      |      | 0.94 |      |
| Satd. Flow (perm)      | 4884 |      |      |      |        |      | 1559  |      |      |      | 1571 |      |
| Volume (vph)           | 29   | 1829 | 73   | 0    | 0      | 0    | 0     | 184  | 200  | 11   | 52   | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00   | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 29   | 1829 | 73   | 0    | 0      | 0    | 0     | 184  | 200  | 11   | 52   | 0    |
| RTOR Reduction (vph)   | 0    | 5    | 0    | 0    | 0      | 0    | 0     | 5    | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 1926 | 0    | 0    | 0      | 0    | 0     | 379  | 0    | 0    | 63   | 0    |
| Parking (#/hr)         | 0    | 0    | 0    |      |        |      |       | 0    | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      |      |      | custom |      |       |      | Perm |      |      |      |
| Protected Phases       | 4    |      |      |      |        |      | 2     |      |      |      | 6    |      |
| Permitted Phases       | 4    |      |      |      |        |      | 8     |      |      |      | 6    |      |
| Actuated Green, G (s)  | 42.0 |      |      |      |        |      | 32.0  |      |      |      | 32.0 |      |
| Effective Green, g (s) | 41.0 |      |      |      |        |      | 31.0  |      |      |      | 31.0 |      |
| Actuated g/C Ratio     | 0.51 |      |      |      |        |      | 0.39  |      |      |      | 0.39 |      |
| Clearance Time (s)     | 3.0  |      |      |      |        |      | 3.0   |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     | 2503 |      |      |      |        |      | 604   |      |      |      | 609  |      |
| v/s Ratio Prot         |      |      |      |      |        |      | c0.24 |      |      |      |      |      |
| v/s Ratio Perm         | 0.39 |      |      |      |        |      |       |      |      |      | 0.04 |      |
| v/c Ratio              | 0.77 |      |      |      |        |      | 0.63  |      |      |      | 0.10 |      |
| Uniform Delay, d1      | 15.7 |      |      |      |        |      | 19.8  |      |      |      | 15.6 |      |
| Progression Factor     | 1.00 |      |      |      |        |      | 0.54  |      |      |      | 1.00 |      |
| Incremental Delay, d2  | 2.3  |      |      |      |        |      | 4.8   |      |      |      | 0.3  |      |
| Delay (s)              | 18.0 |      |      |      |        |      | 15.5  |      |      |      | 16.0 |      |
| Level of Service       | B    |      |      |      |        |      | B     |      |      |      | B    |      |
| Approach Delay (s)     | 18.0 |      |      |      | 0.0    |      | 15.5  |      |      |      | 16.0 |      |
| Approach LOS           | B    |      |      |      | A      |      | B     |      |      |      | B    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 17.6  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.71  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 66.1% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6482: K Street & 28th Street

6/1/2005



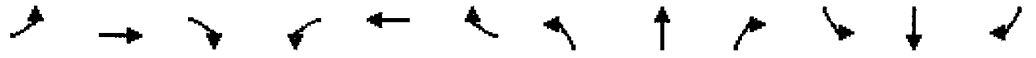
| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↖    | ↗    |      | ↖    | ↗    |      | ↖    | ↗    |      | ↖    | ↗    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  |      | 4.0  | 4.0  |      | 4.0  | 4.0  |      | 4.0  | 4.0  |
| Lane Util. Factor      |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |
| Fr't                   |      | 1.00 | 0.85 |      | 1.00 | 0.85 |      | 1.00 | 0.85 |      | 1.00 | 0.85 |
| Flt Protected          |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 0.99 | 1.00 |      | 0.99 | 1.00 |
| Satd. Flow (prot)      |      | 1672 | 1425 |      | 1671 | 1425 |      | 1661 | 1425 |      | 1661 | 1425 |
| Flt Permitted          |      | 0.96 | 1.00 |      | 0.96 | 1.00 |      | 0.91 | 1.00 |      | 0.92 | 1.00 |
| Satd. Flow (perm)      |      | 1613 | 1425 |      | 1601 | 1425 |      | 1532 | 1425 |      | 1536 | 1425 |
| Volume (vph)           | 20   | 373  | 127  | 46   | 622  | 121  | 46   | 194  | 218  | 35   | 157  | 33   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 20   | 373  | 127  | 46   | 622  | 121  | 46   | 194  | 218  | 35   | 157  | 33   |
| RTOR Reduction (vph)   | 0    | 0    | 48   | 0    | 0    | 28   | 0    | 0    | 158  | 0    | 0    | 24   |
| Lane Group Flow (vph)  | 0    | 393  | 79   | 0    | 668  | 93   | 0    | 240  | 60   | 0    | 192  | 9    |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      | Perm | Perm |      | Perm | Perm |      | Perm | Perm |      | Perm |
| Protected Phases       |      | 4    |      |      | 8    |      |      | 2    |      |      | 6    |      |
| Permitted Phases       | 4    |      | 4    | 8    |      | 8    | 2    |      | 2    | 6    |      | 6    |
| Actuated Green, G (s)  |      | 51.0 | 51.0 |      | 51.0 | 51.0 |      | 23.0 | 23.0 |      | 23.0 | 23.0 |
| Effective Green, g (s) |      | 50.0 | 50.0 |      | 50.0 | 50.0 |      | 22.0 | 22.0 |      | 22.0 | 22.0 |
| Actuated g/C Ratio     |      | 0.62 | 0.62 |      | 0.62 | 0.62 |      | 0.28 | 0.28 |      | 0.28 | 0.28 |
| Clearance Time (s)     |      | 3.0  | 3.0  |      | 3.0  | 3.0  |      | 3.0  | 3.0  |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |      | 1008 | 891  |      | 1001 | 891  |      | 421  | 392  |      | 422  | 392  |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      | 0.24 | 0.06 |      | 0.42 | 0.07 |      | 0.16 | 0.04 |      | 0.12 | 0.01 |
| v/c Ratio              |      | 0.39 | 0.09 |      | 0.67 | 0.10 |      | 0.57 | 0.15 |      | 0.45 | 0.02 |
| Uniform Delay, d1      |      | 7.4  | 6.0  |      | 9.6  | 6.0  |      | 24.9 | 21.9 |      | 24.0 | 21.2 |
| Progression Factor     |      | 1.00 | 1.00 |      | 0.47 | 0.21 |      | 0.91 | 0.94 |      | 1.00 | 0.96 |
| Incremental Delay, d2  |      | 1.1  | 0.2  |      | 3.1  | 0.2  |      | 4.4  | 0.6  |      | 3.4  | 0.1  |
| Delay (s)              |      | 8.6  | 6.2  |      | 7.6  | 1.5  |      | 27.0 | 21.2 |      | 27.6 | 20.5 |
| Level of Service       |      | A    | A    |      | A    | A    |      | C    | C    |      | C    | C    |
| Approach Delay (s)     |      | 8.0  |      |      | 6.7  |      |      | 24.2 |      |      | 26.5 |      |
| Approach LOS           |      | A    |      |      | A    |      |      | C    |      |      | C    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 13.3  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.64  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 92.3% | ICU Level of Service | F   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
6483: L Street & 28th Street

6/1/2005



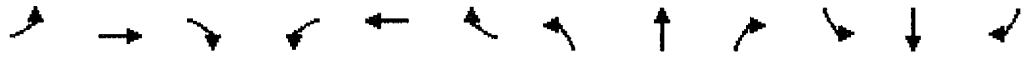
| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|-------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations    |      | ↔     |      |      | ↔    |      |      | ↔    |      |      | ↔     |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      | 4.0  |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor      |      | 1.00  |      |      | 1.00 |      |      | 1.00 |      |      | 1.00  |      |
| Frt                    |      | 0.98  |      |      | 0.96 |      |      | 1.00 |      |      | 0.99  |      |
| Flt Protected          |      | 0.99  |      |      | 0.98 |      |      | 0.99 |      |      | 0.99  |      |
| Satd. Flow (prot)      |      | 1615  |      |      | 1579 |      |      | 1659 |      |      | 1632  |      |
| Flt Permitted          |      | 0.84  |      |      | 0.72 |      |      | 0.92 |      |      | 0.77  |      |
| Satd. Flow (perm)      |      | 1370  |      |      | 1152 |      |      | 1544 |      |      | 1284  |      |
| Volume (vph)           | 152  | 350   | 113  | 105  | 111  | 98   | 43   | 251  | 7    | 101  | 210   | 30   |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 152  | 350   | 113  | 105  | 111  | 98   | 43   | 251  | 7    | 101  | 210   | 30   |
| RTOR Reduction (vph)   | 0    | 10    | 0    | 0    | 21   | 0    | 0    | 1    | 0    | 0    | 5     | 0    |
| Lane Group Flow (vph)  | 0    | 605   |      | 0    | 0    | 293  | 0    | 0    | 300  | 0    | 0     | 336  |
| Parking (#/hr)         | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Turn Type              | Perm |       |      | Perm |      |      | Perm |      |      | Perm |       |      |
| Protected Phases       |      | 2     |      |      | 6    |      |      | 3    |      |      | 7     |      |
| Permitted Phases       | 2    |       |      | 6    |      |      | 3    |      | 3    | 7    |       |      |
| Actuated Green, G (s)  |      | 46.0  |      |      | 46.0 |      |      | 28.0 |      |      | 28.0  |      |
| Effective Green, g (s) |      | 45.0  |      |      | 45.0 |      |      | 27.0 |      |      | 27.0  |      |
| Actuated g/C Ratio     |      | 0.56  |      |      | 0.56 |      |      | 0.34 |      |      | 0.34  |      |
| Clearance Time (s)     |      | 3.0   |      |      | 3.0  |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)     |      | 771   |      |      | 648  |      |      | 521  |      |      | 433   |      |
| v/s Ratio Prot         |      |       |      |      |      |      |      |      |      |      |       |      |
| v/s Ratio Perm         |      | c0.44 |      |      | 0.25 |      |      | 0.19 |      |      | c0.26 |      |
| v/c Ratio              |      | 0.78  |      |      | 0.45 |      |      | 0.58 |      |      | 0.78  |      |
| Uniform Delay, d1      |      | 13.7  |      |      | 10.3 |      |      | 21.8 |      |      | 23.8  |      |
| Progression Factor     |      | 1.00  |      |      | 0.24 |      |      | 0.91 |      |      | 0.61  |      |
| Incremental Delay, d2  |      | 7.9   |      |      | 1.9  |      |      | 3.9  |      |      | 12.3  |      |
| Delay (s)              |      | 21.6  |      |      | 4.4  |      |      | 23.7 |      |      | 26.8  |      |
| Level of Service       |      | C     |      |      | A    |      |      | C    |      |      | C     |      |
| Approach Delay (s)     |      | 21.6  |      |      | 4.4  |      |      | 23.7 |      |      | 26.8  |      |
| Approach LOS           |      | C     |      |      | A    |      |      | C    |      |      | C     |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 19.7  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.78  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 81.0% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6484: Capitol & 28th Street

6/1/2005



| Movement                  | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|---------------------------|------|-------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations       |      | ↕     |      |      | ↕    |      |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)        | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)       |      | 4.0   |      |      | 4.0  |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor         |      | 1.00  |      |      | 0.95 |      |      | 1.00 |      |      | 1.00  |      |
| Fr <sub>t</sub>           |      | 0.95  |      |      | 0.99 |      |      | 0.94 |      |      | 0.99  |      |
| Fl <sub>t</sub> Protected |      | 1.00  |      |      | 1.00 |      |      | 0.99 |      |      | 0.99  |      |
| Satd. Flow (prot)         |      | 1594  |      |      | 3322 |      |      | 1557 |      |      | 1649  |      |
| Fl <sub>t</sub> Permitted |      | 0.99  |      |      | 0.88 |      |      | 0.85 |      |      | 0.80  |      |
| Satd. Flow (perm)         |      | 1573  |      |      | 2931 |      |      | 1332 |      |      | 1336  |      |
| Volume (vph)              | 12   | 399   | 229  | 50   | 632  | 42   | 86   | 170  | 223  | 94   | 332   | 21   |
| Peak-hour factor, PHF     | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)           | 12   | 399   | 229  | 50   | 632  | 42   | 86   | 170  | 223  | 94   | 332   | 21   |
| RTOR Reduction (vph)      | 0    | 25    | 0    | 0    | 6    | 0    | 0    | 39   | 0    | 0    | 2     | 0    |
| Lane Group Flow (vph)     | 0    | 615   | 0    | 0    | 718  | 0    | 0    | 440  | 0    | 0    | 445   | 0    |
| Parking (#/hr)            | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Turn Type                 | Perm |       |      | Perm |      |      | Perm |      |      | Perm |       |      |
| Protected Phases          |      | 4     |      |      | 8    |      |      | 2    |      |      | 6     |      |
| Permitted Phases          | 4    |       |      | 8    |      |      | 2    |      |      | 6    |       |      |
| Actuated Green, G (s)     |      | 39.0  |      |      | 39.0 |      |      | 35.0 |      |      | 35.0  |      |
| Effective Green, g (s)    |      | 38.0  |      |      | 38.0 |      |      | 34.0 |      |      | 34.0  |      |
| Actuated g/C Ratio        |      | 0.48  |      |      | 0.48 |      |      | 0.42 |      |      | 0.42  |      |
| Clearance Time (s)        |      | 3.0   |      |      | 3.0  |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)        |      | 747   |      |      | 1392 |      |      | 566  |      |      | 568   |      |
| v/s Ratio Prot            |      |       |      |      |      |      |      |      |      |      |       |      |
| v/s Ratio Perm            |      | c0.39 |      |      | 0.25 |      |      | 0.33 |      |      | c0.33 |      |
| v/c Ratio                 |      | 0.82  |      |      | 0.52 |      |      | 0.78 |      |      | 0.78  |      |
| Uniform Delay, d1         |      | 18.1  |      |      | 14.6 |      |      | 19.7 |      |      | 19.8  |      |
| Progression Factor        |      | 1.00  |      |      | 0.45 |      |      | 0.90 |      |      | 0.74  |      |
| Incremental Delay, d2     |      | 10.0  |      |      | 1.3  |      |      | 8.9  |      |      | 7.7   |      |
| Delay (s)                 |      | 28.1  |      |      | 8.0  |      |      | 26.6 |      |      | 22.5  |      |
| Level of Service          |      | C     |      |      | A    |      |      | C    |      |      | C     |      |
| Approach Delay (s)        |      | 28.1  |      |      | 8.0  |      |      | 26.6 |      |      | 22.5  |      |
| Approach LOS              |      | C     |      |      | A    |      |      | C    |      |      | C     |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 20.3  | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 0.80  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 86.7% | ICU Level of Service | E   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6485: N Street & 28th Street

6/1/2005



| Movement                          | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations               |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)               |      | 4.0  |      |      | 4.0  |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor                 |      | 1.00 |      |      | 1.00 |      |      | 1.00 |      |      | 1.00  |      |
| Fr <sub>t</sub>                   |      | 0.99 |      |      | 0.98 |      |      | 0.96 |      |      | 1.00  |      |
| Fl <sub>t</sub> Protected         |      | 0.99 |      |      | 1.00 |      |      | 1.00 |      |      | 0.96  |      |
| Satd. Flow (prot)                 |      | 1639 |      |      | 1639 |      |      | 1610 |      |      | 1607  |      |
| Fl <sub>t</sub> Permitted         |      | 0.59 |      |      | 0.97 |      |      | 0.99 |      |      | 0.64  |      |
| Satd. Flow (perm)                 |      | 982  |      |      | 1597 |      |      | 1595 |      |      | 1061  |      |
| Volume (vph)                      | 89   | 225  | 23   | 37   | 618  | 115  | 5    | 145  | 60   | 499  | 121   | 17   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)                   | 89   | 225  | 23   | 37   | 618  | 115  | 5    | 145  | 60   | 499  | 121   | 17   |
| RTOR Reduction (vph)              | 0    | 4    | 0    | 0    | 8    | 0    | 0    | 18   | 0    | 0    | 1     | 0    |
| Lane Group Flow (vph)             | 0    | 333  | 0    | 0    | 762  | 0    | 0    | 192  | 0    | 0    | 636   | 0    |
| Parking (#/hr)                    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Turn Type                         | Perm |      |      | Perm |      |      | Perm |      |      | Perm |       |      |
| Protected Phases                  |      | 2    |      |      | 6    |      |      | 8    |      |      | 4     |      |
| Permitted Phases                  | 2    |      |      | 6    |      |      | 8    | 8    |      | 4    | 4     |      |
| Actuated Green, G (s)             |      | 34.0 |      |      | 34.0 |      |      | 40.0 |      |      | 40.0  |      |
| Effective Green, g (s)            |      | 33.0 |      |      | 33.0 |      |      | 39.0 |      |      | 39.0  |      |
| Actuated g/C Ratio                |      | 0.41 |      |      | 0.41 |      |      | 0.49 |      |      | 0.49  |      |
| Clearance Time (s)                |      | 3.0  |      |      | 3.0  |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)                |      | 405  |      |      | 659  |      |      | 778  |      |      | 517   |      |
| v/s Ratio Prot                    |      |      |      |      |      |      |      |      |      |      |       |      |
| v/s Ratio Perm                    |      | 0.34 |      |      | 0.48 |      |      | 0.12 |      |      | 0.60  |      |
| v/c Ratio                         |      | 0.82 |      |      | 1.16 |      |      | 0.25 |      |      | 1.23  |      |
| Uniform Delay, d <sub>1</sub>     |      | 20.9 |      |      | 23.5 |      |      | 11.9 |      |      | 20.5  |      |
| Progression Factor                |      | 1.00 |      |      | 0.49 |      |      | 1.00 |      |      | 0.98  |      |
| Incremental Delay, d <sub>2</sub> |      | 17.1 |      |      | 72.4 |      |      | 0.8  |      |      | 114.4 |      |
| Delay (s)                         |      | 38.0 |      |      | 83.8 |      |      | 12.7 |      |      | 134.5 |      |
| Level of Service                  |      | D    |      |      | F    |      |      | B    |      |      | F     |      |
| Approach Delay (s)                |      | 38.0 |      |      | 83.8 |      |      | 12.7 |      |      | 134.5 |      |
| Approach LOS                      |      | D    |      |      | F    |      |      | B    |      |      | F     |      |

**Intersection Summary**

|                                   |        |                      |     |
|-----------------------------------|--------|----------------------|-----|
| HCM Average Control Delay         | 84.8   | HCM Level of Service | F   |
| HCM Volume to Capacity ratio      | 1.20   |                      |     |
| Actuated Cycle Length (s)         | 80.0   | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 106.7% | ICU Level of Service | G   |
| Analysis Period (min)             | 15     |                      |     |
| c Critical Lane Group             |        |                      |     |



HCM Signalized Intersection Capacity Analysis  
6511: K Street & Alhambra

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↕    | ↗    |      | ↕    |      |      | ↕↗   |      |      | ↕↗   |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  |      | 4.0  |      |      | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00 | 1.00 |      | 1.00 |      |      | 0.95 |      |      | 0.95 |      |
| Frt                    |      | 1.00 | 0.85 |      | 0.99 |      |      | 0.98 |      |      | 0.96 |      |
| Flt Protected          |      | 0.97 | 1.00 |      | 0.99 |      |      | 0.99 |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 1802 | 1583 |      | 1816 |      |      | 3424 |      |      | 3410 |      |
| Flt Permitted          |      | 0.72 | 1.00 |      | 0.89 |      |      | 0.60 |      |      | 0.95 |      |
| Satd. Flow (perm)      |      | 1346 | 1583 |      | 1632 |      |      | 2089 |      |      | 3235 |      |
| Volume (vph)           | 176  | 83   | 308  | 39   | 97   | 14   | 111  | 359  | 85   | 12   | 748  | 239  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 176  | 83   | 308  | 39   | 97   | 14   | 111  | 359  | 85   | 12   | 748  | 239  |
| RTOR Reduction (vph)   | 0    | 0    | 85   | 0    | 5    | 0    | 0    | 18   | 0    | 0    | 37   | 0    |
| Lane Group Flow (vph)  | 0    | 259  | 223  | 0    | 145  | 0    | 0    | 537  | 0    | 0    | 962  | 0    |
| Turn Type              | Perm |      | Perm | Perm |      |      | Perm |      |      | Perm |      |      |
| Protected Phases       |      | 4    |      |      | 8    |      |      | 2    |      |      |      | 6    |
| Permitted Phases       | 4    |      | 4    | 8    |      |      | 2    |      |      | 6    |      |      |
| Actuated Green, G (s)  |      | 34.0 | 34.0 |      | 34.0 |      |      | 40.0 |      |      | 40.0 |      |
| Effective Green, g (s) |      | 33.0 | 33.0 |      | 33.0 |      |      | 39.0 |      |      | 39.0 |      |
| Actuated g/C Ratio     |      | 0.41 | 0.41 |      | 0.41 |      |      | 0.49 |      |      | 0.49 |      |
| Clearance Time (s)     |      | 3.0  | 3.0  |      | 3.0  |      |      | 3.0  |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 555  | 653  |      | 673  |      |      | 1018 |      |      | 1577 |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      | 0.19 | 0.14 |      | 0.09 |      |      | 0.26 |      |      | 0.30 |      |
| v/c Ratio              |      | 0.47 | 0.34 |      | 0.22 |      |      | 0.53 |      |      | 0.61 |      |
| Uniform Delay, d1      |      | 17.1 | 16.1 |      | 15.2 |      |      | 14.1 |      |      | 15.0 |      |
| Progression Factor     |      | 0.83 | 0.77 |      | 1.00 |      |      | 1.18 |      |      | 0.63 |      |
| Incremental Delay, d2  |      | 2.6  | 1.3  |      | 0.7  |      |      | 0.8  |      |      | 0.7  |      |
| Delay (s)              |      | 16.9 | 13.7 |      | 15.9 |      |      | 17.5 |      |      | 10.1 |      |
| Level of Service       |      | B    | B    |      | B    |      |      | B    |      |      | B    |      |
| Approach Delay (s)     |      | 15.1 |      |      | 15.9 |      |      | 17.5 |      |      | 10.1 |      |
| Approach LOS           |      | B    |      |      | B    |      |      | B    |      |      | B    |      |

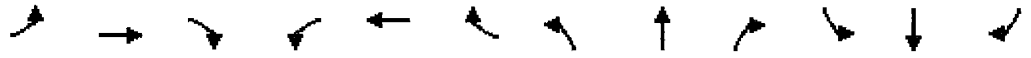
Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 13.6  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.54  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 75.3% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 9622: K Street & 30th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    | ↖    | ↑    |      |      | ↑    | ↗    |      | ↖↑↗  |      |      |      |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0  | 4.0  |      |      | 4.0  | 4.0  |      | 4.0  |      |      |      |      |
| Lane Util. Factor      | 1.00 | 1.00 |      |      | 1.00 | 1.00 |      | 0.91 |      |      |      |      |
| Frt                    | 1.00 | 1.00 |      |      | 1.00 | 0.85 |      | 0.97 |      |      |      |      |
| Flt Protected          | 0.95 | 1.00 |      |      | 1.00 | 1.00 |      | 0.99 |      |      |      |      |
| Satd. Flow (prot)      | 1770 | 1863 |      |      | 1863 | 1583 |      | 4892 |      |      |      |      |
| Flt Permitted          | 0.36 | 1.00 |      |      | 1.00 | 1.00 |      | 0.99 |      |      |      |      |
| Satd. Flow (perm)      | 671  | 1863 |      |      | 1863 | 1583 |      | 4892 |      |      |      |      |
| Volume (vph)           | 117  | 325  | 0    | 0    | 480  | 7    | 225  | 703  | 218  | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 117  | 325  | 0    | 0    | 480  | 7    | 225  | 703  | 218  | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 0    | 2    | 0    | 49   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 117  | 325  | 0    | 0    | 480  | 5    | 0    | 1097 | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      |      |      |      | Perm | Perm |      |      |      |      |      |
| Protected Phases       |      | 4    |      |      | 8    |      |      | 2    |      |      |      |      |
| Permitted Phases       | 4    |      |      |      |      | 8    | 2    |      |      |      |      |      |
| Actuated Green, G (s)  | 41.0 | 41.0 |      |      | 41.0 | 41.0 |      | 33.0 |      |      |      |      |
| Effective Green, g (s) | 40.0 | 40.0 |      |      | 40.0 | 40.0 |      | 32.0 |      |      |      |      |
| Actuated g/C Ratio     | 0.50 | 0.50 |      |      | 0.50 | 0.50 |      | 0.40 |      |      |      |      |
| Clearance Time (s)     | 3.0  | 3.0  |      |      | 3.0  | 3.0  |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)     | 336  | 932  |      |      | 932  | 792  |      | 1957 |      |      |      |      |
| v/s Ratio Prot         |      | 0.17 |      |      | 0.26 |      |      |      |      |      |      |      |
| v/s Ratio Perm         | 0.17 |      |      |      |      | 0.00 |      | 0.22 |      |      |      |      |
| v/c Ratio              | 0.35 | 0.35 |      |      | 0.52 | 0.01 |      | 0.56 |      |      |      |      |
| Uniform Delay, d1      | 12.1 | 12.1 |      |      | 13.5 | 10.0 |      | 18.6 |      |      |      |      |
| Progression Factor     | 0.56 | 0.58 |      |      | 0.78 | 0.64 |      | 0.46 |      |      |      |      |
| Incremental Delay, d2  | 2.3  | 0.8  |      |      | 1.8  | 0.0  |      | 1.0  |      |      |      |      |
| Delay (s)              | 9.1  | 7.9  |      |      | 12.3 | 6.4  |      | 9.5  |      |      |      |      |
| Level of Service       | A    | A    |      |      | B    | A    |      | A    |      |      |      |      |
| Approach Delay (s)     |      | 8.2  |      |      | 12.2 |      |      | 9.5  |      |      | 0.0  |      |
| Approach LOS           |      | A    |      |      | B    |      |      | A    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 9.9   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.54  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 76.5% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

CUMULATIVE PLUS SUTTER PROGRAM PLUS TRINITY PROJECT  
WITH CENTRAL CITY TWO WAY CONVERSION

AM Peak Hour

Signalized Intersections

(am12)



HCM Signalized Intersection Capacity Analysis  
 2004: L Street & 21th Street

6/1/2005



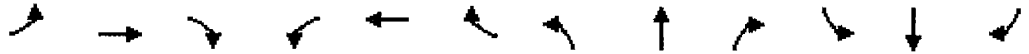
| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|-------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↕     |      |      | ↕    |      |      | ↕↕   |      |      |      |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      | 4.0  |      |      | 4.0  |      |      |      |      |
| Lane Util. Factor      |      | 1.00  |      |      | 1.00 |      |      | 0.95 |      |      |      |      |
| Frt                    |      | 1.00  |      |      | 0.98 |      |      | 0.99 |      |      |      |      |
| Flt Protected          |      | 0.99  |      |      | 1.00 |      |      | 1.00 |      |      |      |      |
| Satd. Flow (prot)      |      | 1664  |      |      | 1646 |      |      | 3329 |      |      |      |      |
| Flt Permitted          |      | 0.90  |      |      | 1.00 |      |      | 1.00 |      |      |      |      |
| Satd. Flow (perm)      |      | 1515  |      |      | 1646 |      |      | 3329 |      |      |      |      |
| Volume (vph)           | 54   | 300   | 0    | 0    | 297  | 47   | 138  | 1270 | 50   | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 54   | 300   | 0    | 0    | 297  | 47   | 138  | 1270 | 50   | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0    | 0     | 0    | 0    | 9    | 0    | 0    | 4    | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 354   | 0    | 0    | 335  | 0    | 0    | 1454 | 0    | 0    | 0    | 0    |
| Parking (#/hr)         | 0    | 0     |      |      | 0    | 0    | 0    | 0    | 0    |      |      |      |
| Turn Type              | Perm |       |      |      |      |      | Perm |      |      |      |      |      |
| Protected Phases       |      | 2     |      |      | 6    |      |      | 8    |      |      |      |      |
| Permitted Phases       | 2    |       |      |      |      |      | 8    |      | 8    |      |      |      |
| Actuated Green, G (s)  |      | 21.0  |      |      | 21.0 |      |      | 33.0 |      |      |      |      |
| Effective Green, g (s) |      | 20.0  |      |      | 20.0 |      |      | 32.0 |      |      |      |      |
| Actuated g/C Ratio     |      | 0.33  |      |      | 0.33 |      |      | 0.53 |      |      |      |      |
| Clearance Time (s)     |      | 3.0   |      |      | 3.0  |      |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)     |      | 505   |      |      | 549  |      |      | 1775 |      |      |      |      |
| v/s Ratio Prot         |      |       |      |      | 0.20 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      | c0.23 |      |      |      |      |      | 0.44 |      |      |      |      |
| v/c Ratio              |      | 0.70  |      |      | 0.61 |      |      | 0.82 |      |      |      |      |
| Uniform Delay, d1      |      | 17.4  |      |      | 16.7 |      |      | 11.6 |      |      |      |      |
| Progression Factor     |      | 0.45  |      |      | 0.89 |      |      | 1.00 |      |      |      |      |
| Incremental Delay, d2  |      | 7.3   |      |      | 4.6  |      |      | 4.4  |      |      |      |      |
| Delay (s)              |      | 15.1  |      |      | 19.5 |      |      | 16.0 |      |      |      |      |
| Level of Service       |      | B     |      |      | B    |      |      | B    |      |      |      |      |
| Approach Delay (s)     |      | 15.1  |      |      | 19.5 |      |      | 16.0 |      |      | 0.0  |      |
| Approach LOS           |      | B     |      |      | B    |      |      | B    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 16.4  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.77  |                      |     |
| Actuated Cycle Length (s)         | 60.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 88.0% | ICU Level of Service | E   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 2012: J Street & 21th Street

6/1/2005



| Movement                          | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT                   | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|-------|------|------|------|------|------|-----------------------|------|------|------|------|
| Lane Configurations               |      | ↑↑↑   |      |      |      |      |      | ↑↑                    |      |      |      |      |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900                  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0   |      |      |      |      |      | 4.0                   |      |      |      |      |
| Lane Util. Factor                 |      | 0.91  |      |      |      |      |      | 0.95                  |      |      |      |      |
| Fr't                              |      | 1.00  |      |      |      |      |      | 0.98                  |      |      |      |      |
| Flt Protected                     |      | 1.00  |      |      |      |      |      | 1.00                  |      |      |      |      |
| Satd. Flow (prot)                 |      | 4915  |      |      |      |      |      | 3282                  |      |      |      |      |
| Flt Permitted                     |      | 1.00  |      |      |      |      |      | 1.00                  |      |      |      |      |
| Satd. Flow (perm)                 |      | 4915  |      |      |      |      |      | 3282                  |      |      |      |      |
| Volume (vph)                      | 5    | 1047  | 0    | 0    | 0    | 0    | 0    | 1106                  | 210  | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00                  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 5    | 1047  | 0    | 0    | 0    | 0    | 0    | 1106                  | 210  | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0    | 1     | 0    | 0    | 0    | 0    | 0    | 4                     | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 0    | 1051  | 0    | 0    | 0    | 0    | 0    | 1312                  | 0    | 0    | 0    | 0    |
| Parking (#/hr)                    | 0    | 0     |      |      |      |      |      | 0                     | 0    |      |      |      |
| Turn Type                         | Perm |       |      |      |      |      |      |                       |      |      |      |      |
| Protected Phases                  |      | 4     |      |      |      |      |      | 2                     |      |      |      |      |
| Permitted Phases                  | 4    |       |      |      |      |      |      |                       |      |      |      |      |
| Actuated Green, G (s)             |      | 19.0  |      |      |      |      |      | 35.0                  |      |      |      |      |
| Effective Green, g (s)            |      | 18.0  |      |      |      |      |      | 34.0                  |      |      |      |      |
| Actuated g/C Ratio                |      | 0.30  |      |      |      |      |      | 0.57                  |      |      |      |      |
| Clearance Time (s)                |      | 3.0   |      |      |      |      |      | 3.0                   |      |      |      |      |
| Lane Grp Cap (vph)                |      | 1475  |      |      |      |      |      | 1860                  |      |      |      |      |
| v/s Ratio Prot                    |      |       |      |      |      |      |      | 0.40                  |      |      |      |      |
| v/s Ratio Perm                    |      | 0.21  |      |      |      |      |      |                       |      |      |      |      |
| v/c Ratio                         |      | 0.71  |      |      |      |      |      | 0.71                  |      |      |      |      |
| Uniform Delay, d1                 |      | 18.7  |      |      |      |      |      | 9.4                   |      |      |      |      |
| Progression Factor                |      | 0.61  |      |      |      |      |      | 0.18                  |      |      |      |      |
| Incremental Delay, d2             |      | 2.6   |      |      |      |      |      | 1.3                   |      |      |      |      |
| Delay (s)                         |      | 14.0  |      |      |      |      |      | 3.0                   |      |      |      |      |
| Level of Service                  |      | B     |      |      |      |      |      | A                     |      |      |      |      |
| Approach Delay (s)                |      | 14.0  |      |      | 0.0  |      |      | 3.0                   |      |      | 0.0  |      |
| Approach LOS                      |      | B     |      |      | A    |      |      | A                     |      |      | A    |      |
| <b>Intersection Summary</b>       |      |       |      |      |      |      |      |                       |      |      |      |      |
| HCM Average Control Delay         |      | 7.9   |      |      |      |      |      | HCM Level of Service  |      | A    |      |      |
| HCM Volume to Capacity ratio      |      | 0.71  |      |      |      |      |      | Sum of lost time (s)  |      | 8.0  |      |      |
| Actuated Cycle Length (s)         |      | 60.0  |      |      |      |      |      | ICU Level of Service  |      | C    |      |      |
| Intersection Capacity Utilization |      | 64.3% |      |      |      |      |      | Analysis Period (min) |      | 15   |      |      |
| c Critical Lane Group             |      |       |      |      |      |      |      |                       |      |      |      |      |

# HCM Signalized Intersection Capacity Analysis

2074: J Street & 19th Street

6/1/2005



| Movement                          | EBL                 | EBT   | EBR   | WBL  | WBT  | WBR  | NBL                  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|---------------------|-------|-------|------|------|------|----------------------|------|------|------|------|------|
| Lane Configurations               |                     | ↑↑↑   |       |      |      |      |                      |      |      |      | ↑↑   |      |
| Ideal Flow (vphpl)                | 1900                | 1900  | 1900  | 1900 | 1900 | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |                     | 4.0   |       |      |      |      |                      |      |      |      | 4.0  |      |
| Lane Util. Factor                 |                     | 0.91  |       |      |      |      |                      |      |      |      | 0.95 |      |
| Frt                               |                     | 0.96  |       |      |      |      |                      |      |      |      | 1.00 |      |
| Flt Protected                     |                     | 1.00  |       |      |      |      |                      |      |      |      | 0.99 |      |
| Satd. Flow (prot)                 |                     | 4739  |       |      |      |      |                      |      |      |      | 3314 |      |
| Flt Permitted                     |                     | 1.00  |       |      |      |      |                      |      |      |      | 0.99 |      |
| Satd. Flow (perm)                 |                     | 4739  |       |      |      |      |                      |      |      |      | 3314 |      |
| Volume (vph)                      | 0                   | 1036  | 326   | 0    | 0    | 0    | 0                    | 0    | 0    | 109  | 263  | 0    |
| Peak-hour factor, PHF             | 1.00                | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0                   | 1036  | 326   | 0    | 0    | 0    | 0                    | 0    | 0    | 109  | 263  | 0    |
| RTOR Reduction (vph)              | 0                   | 95    | 0     | 0    | 0    | 0    | 0                    | 0    | 0    | 0    | 44   | 0    |
| Lane Group Flow (vph)             | 0                   | 1268  | 0     | 0    | 0    | 0    | 0                    | 0    | 0    | 0    | 328  | 0    |
| Parking (#/hr)                    |                     | 0     | 0     |      |      |      |                      |      |      | 0    | 0    |      |
| Turn Type                         |                     |       |       |      |      |      |                      |      |      | Perm |      |      |
| Protected Phases                  |                     | 4     |       |      |      |      |                      |      |      |      | 6    |      |
| Permitted Phases                  |                     |       |       |      |      |      |                      |      |      | 6    |      |      |
| Actuated Green, G (s)             |                     | 31.0  |       |      |      |      |                      |      |      |      | 23.0 |      |
| Effective Green, g (s)            |                     | 30.0  |       |      |      |      |                      |      |      |      | 22.0 |      |
| Actuated g/C Ratio                |                     | 0.50  |       |      |      |      |                      |      |      |      | 0.37 |      |
| Clearance Time (s)                |                     | 3.0   |       |      |      |      |                      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |                     | 2370  |       |      |      |      |                      |      |      |      | 1215 |      |
| v/s Ratio Prot                    |                     | c0.27 |       |      |      |      |                      |      |      |      |      |      |
| v/s Ratio Perm                    |                     |       |       |      |      |      |                      |      |      |      | 0.10 |      |
| v/c Ratio                         |                     | 0.53  |       |      |      |      |                      |      |      |      | 0.27 |      |
| Uniform Delay, d1                 |                     | 10.2  |       |      |      |      |                      |      |      |      | 13.4 |      |
| Progression Factor                |                     | 1.00  |       |      |      |      |                      |      |      |      | 1.00 |      |
| Incremental Delay, d2             |                     | 0.9   |       |      |      |      |                      |      |      |      | 0.5  |      |
| Delay (s)                         |                     | 11.1  |       |      |      |      |                      |      |      |      | 13.9 |      |
| Level of Service                  |                     | B     |       |      |      |      |                      |      |      |      | B    |      |
| Approach Delay (s)                |                     | 11.1  |       |      | 0.0  |      |                      | 0.0  |      |      | 13.9 |      |
| Approach LOS                      |                     | B     |       |      | A    |      |                      | A    |      |      | B    |      |
| <b>Intersection Summary</b>       |                     |       |       |      |      |      |                      |      |      |      |      |      |
| HCM Average Control Delay         |                     |       | 11.7  |      |      |      | HCM Level of Service |      |      |      | B    |      |
| HCM Volume to Capacity ratio      |                     |       | 0.42  |      |      |      |                      |      |      |      |      |      |
| Actuated Cycle Length (s)         |                     |       | 60.0  |      |      |      | Sum of lost time (s) |      |      | 8.0  |      |      |
| Intersection Capacity Utilization |                     |       | 44.4% |      |      |      | ICU Level of Service |      |      | A    |      |      |
| Analysis Period (min)             |                     |       | 15    |      |      |      |                      |      |      |      |      |      |
| c                                 | Critical Lane Group |       |       |      |      |      |                      |      |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
 2088: L Street & 29th Street

6/1/2005



| Movement                          | EBL  | EBT  | EBR    | WBL  | WBT   | WBR                  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|-----------------------------------|------|------|--------|------|-------|----------------------|------|------|------|------|-------|------|
| Lane Configurations               |      |      | ↗      | ↘    | ↖     |                      |      |      |      |      | ↖↗↘   |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900   | 1900 | 1900  | 1900                 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)               |      |      | 4.0    | 4.0  | 4.0   |                      |      |      |      |      | 4.0   |      |
| Lane Util. Factor                 |      |      | 1.00   | 1.00 | 1.00  |                      |      |      |      |      | 0.91  |      |
| Frt                               |      |      | 0.86   | 1.00 | 1.00  |                      |      |      |      |      | 0.99  |      |
| Flt Protected                     |      |      | 1.00   | 0.95 | 1.00  |                      |      |      |      |      | 1.00  |      |
| Satd. Flow (prot)                 |      |      | 1450   | 1770 | 1863  |                      |      |      |      |      | 4861  |      |
| Flt Permitted                     |      |      | 1.00   | 0.95 | 1.00  |                      |      |      |      |      | 1.00  |      |
| Satd. Flow (perm)                 |      |      | 1450   | 1770 | 1863  |                      |      |      |      |      | 4861  |      |
| Volume (vph)                      | 0    | 0    | 376    | 156  | 583   | 0                    | 0    | 0    | 0    | 0    | 1104  | 88   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00   | 1.00 | 1.00  | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 376    | 156  | 583   | 0                    | 0    | 0    | 0    | 0    | 1104  | 88   |
| RTOR Reduction (vph)              | 0    | 0    | 10     | 10   | 0     | 0                    | 0    | 0    | 0    | 0    | 11    | 0    |
| Lane Group Flow (vph)             | 0    | 0    | 367    | 147  | 583   | 0                    | 0    | 0    | 0    | 0    | 1181  | 0    |
| Parking (#/hr)                    |      |      | 0      |      |       |                      |      |      |      |      | 0     | 0    |
| Turn Type                         |      |      | custom | Perm |       |                      |      |      |      |      |       |      |
| Protected Phases                  |      |      |        |      | 8     |                      |      |      |      |      | 6     |      |
| Permitted Phases                  |      |      | 4      | 8    |       |                      |      |      |      |      |       |      |
| Actuated Green, G (s)             |      |      | 43.0   | 43.0 | 43.0  |                      |      |      |      |      | 31.0  |      |
| Effective Green, g (s)            |      |      | 42.0   | 42.0 | 42.0  |                      |      |      |      |      | 30.0  |      |
| Actuated g/C Ratio                |      |      | 0.52   | 0.52 | 0.52  |                      |      |      |      |      | 0.38  |      |
| Clearance Time (s)                |      |      | 3.0    | 3.0  | 3.0   |                      |      |      |      |      | 3.0   |      |
| Lane Grp Cap (vph)                |      |      | 761    | 929  | 978   |                      |      |      |      |      | 1823  |      |
| v/s Ratio Prot                    |      |      |        |      | c0.31 |                      |      |      |      |      | c0.24 |      |
| v/s Ratio Perm                    |      |      | 0.25   | 0.08 |       |                      |      |      |      |      |       |      |
| v/c Ratio                         |      |      | 0.48   | 0.16 | 0.60  |                      |      |      |      |      | 0.65  |      |
| Uniform Delay, d1                 |      |      | 12.1   | 9.8  | 13.1  |                      |      |      |      |      | 20.6  |      |
| Progression Factor                |      |      | 0.39   | 0.54 | 0.56  |                      |      |      |      |      | 0.60  |      |
| Incremental Delay, d2             |      |      | 2.0    | 0.3  | 2.6   |                      |      |      |      |      | 1.6   |      |
| Delay (s)                         |      |      | 6.7    | 5.6  | 10.0  |                      |      |      |      |      | 14.1  |      |
| Level of Service                  |      |      | A      | A    | A     |                      |      |      |      |      | B     |      |
| Approach Delay (s)                |      | 6.7  |        |      | 9.1   |                      | 0.0  |      |      |      | 14.1  |      |
| Approach LOS                      |      | A    |        |      | A     |                      | A    |      |      |      | B     |      |
| <b>Intersection Summary</b>       |      |      |        |      |       |                      |      |      |      |      |       |      |
| HCM Average Control Delay         |      |      | 11.3   |      |       | HCM Level of Service |      |      |      |      | B     |      |
| HCM Volume to Capacity ratio      |      |      | 0.62   |      |       |                      |      |      |      |      |       |      |
| Actuated Cycle Length (s)         |      |      | 80.0   |      |       | Sum of lost time (s) |      |      |      | 8.0  |       |      |
| Intersection Capacity Utilization |      |      | 65.2%  |      |       | ICU Level of Service |      |      |      |      | C     |      |
| Analysis Period (min)             |      |      | 15     |      |       |                      |      |      |      |      |       |      |
| c Critical Lane Group             |      |      |        |      |       |                      |      |      |      |      |       |      |



HCM Signalized Intersection Capacity Analysis  
 2239: L Street & Alhambra

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      |      | ↕    |      |      | ↕    |      |      | ↕    | ↕    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      |      | 4.0  |      |      | 4.0  | 4.0  |
| Lane Util. Factor      |      |      |      |      | 1.00 |      |      | 1.00 |      |      | 1.00 | 1.00 |
| Frt                    |      |      |      |      | 0.99 |      |      | 0.96 |      |      | 1.00 | 0.85 |
| Flt Protected          |      |      |      |      | 1.00 |      |      | 0.99 |      |      | 0.99 | 1.00 |
| Satd. Flow (prot)      |      |      |      |      | 1645 |      |      | 1593 |      |      | 1851 | 1425 |
| Flt Permitted          |      |      |      |      | 1.00 |      |      | 0.89 |      |      | 0.85 | 1.00 |
| Satd. Flow (perm)      |      |      |      |      | 1645 |      |      | 1433 |      |      | 1589 | 1425 |
| Volume (vph)           | 0    | 0    | 0    | 13   | 120  | 16   | 81   | 425  | 250  | 71   | 496  | 331  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 13   | 120  | 16   | 81   | 425  | 250  | 71   | 496  | 331  |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 6    | 0    | 0    | 22   | 0    | 0    | 0    | 99   |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 143  | 0    | 0    | 734  | 0    | 0    | 567  | 232  |
| Parking (#/hr)         |      |      |      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Turn Type              |      |      |      | Perm |      | Perm |      | Perm |      | Perm |      | Perm |
| Protected Phases       |      |      |      |      | 8    |      |      | 2    |      |      | 6    |      |
| Permitted Phases       |      |      |      | 8    |      | 2    |      |      |      | 6    |      | 6    |
| Actuated Green, G (s)  |      |      |      |      | 17.0 |      |      | 57.0 |      |      | 57.0 | 57.0 |
| Effective Green, g (s) |      |      |      |      | 16.0 |      |      | 56.0 |      |      | 56.0 | 56.0 |
| Actuated g/C Ratio     |      |      |      |      | 0.20 |      |      | 0.70 |      |      | 0.70 | 0.70 |
| Clearance Time (s)     |      |      |      |      | 3.0  |      |      | 3.0  |      |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |      |      |      |      | 329  |      |      | 1003 |      |      | 1112 | 998  |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      |      |      | 0.09 |      |      | 0.51 |      |      | 0.36 | 0.16 |
| v/c Ratio              |      |      |      |      | 0.44 |      |      | 0.73 |      |      | 0.51 | 0.23 |
| Uniform Delay, d1      |      |      |      |      | 28.0 |      |      | 7.4  |      |      | 5.6  | 4.3  |
| Progression Factor     |      |      |      |      | 1.00 |      |      | 0.38 |      |      | 1.31 | 3.62 |
| Incremental Delay, d2  |      |      |      |      | 4.2  |      |      | 2.3  |      |      | 1.5  | 0.5  |
| Delay (s)              |      |      |      |      | 32.2 |      |      | 5.1  |      |      | 8.9  | 16.1 |
| Level of Service       |      |      |      |      | C    |      |      | A    |      |      | A    | B    |
| Approach Delay (s)     |      | 0.0  |      |      | 32.2 |      |      | 5.1  |      |      | 11.5 |      |
| Approach LOS           |      | A    |      |      | C    |      |      | A    |      |      | B    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.5  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.67  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 90.1% | ICU Level of Service | E   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3426: L Street & 19th Street

6/1/2005



| Movement                          | EBL  | EBT  | EBR   | WBL  | WBT  | WBR                  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|-------|------|------|----------------------|------|------|------|------|------|------|
| Lane Configurations               |      | ↑    |       |      | ↑    |                      |      |      |      |      | ↑↓   |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900 | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0  |       |      | 4.0  |                      |      |      |      |      | 4.0  |      |
| Lane Util. Factor                 |      | 1.00 |       |      | 1.00 |                      |      |      |      |      | 0.95 |      |
| Frt                               |      | 0.97 |       |      | 1.00 |                      |      |      |      |      | 0.99 |      |
| Flt Protected                     |      | 1.00 |       |      | 1.00 |                      |      |      |      |      | 0.98 |      |
| Satd. Flow (prot)                 |      | 1620 |       |      | 1673 |                      |      |      |      |      | 3247 |      |
| Flt Permitted                     |      | 1.00 |       |      | 0.99 |                      |      |      |      |      | 0.98 |      |
| Satd. Flow (perm)                 |      | 1620 |       |      | 1659 |                      |      |      |      |      | 3247 |      |
| Volume (vph)                      | 0    | 76   | 25    | 19   | 402  | 0                    | 0    | 0    | 0    | 304  | 270  | 43   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 76   | 25    | 19   | 402  | 0                    | 0    | 0    | 0    | 304  | 270  | 43   |
| RTOR Reduction (vph)              | 0    | 13   | 0     | 0    | 0    | 0                    | 0    | 0    | 0    | 0    | 9    | 0    |
| Lane Group Flow (vph)             | 0    | 89   | 0     | 0    | 421  | 0                    | 0    | 0    | 0    | 0    | 608  | 0    |
| Parking (#/hr)                    |      | 0    | 0     | 0    | 0    |                      |      |      |      | 0    | 0    | 0    |
| Turn Type                         |      |      |       | Perm |      |                      |      |      |      |      | Perm |      |
| Protected Phases                  |      | 2    |       |      | 6    |                      |      |      |      |      |      | 4    |
| Permitted Phases                  |      |      |       | 6    | 6    |                      |      |      |      | 4    |      | 4    |
| Actuated Green, G (s)             |      | 31.0 |       |      | 31.0 |                      |      |      |      |      |      | 23.0 |
| Effective Green, g (s)            |      | 30.0 |       |      | 30.0 |                      |      |      |      |      |      | 22.0 |
| Actuated g/C Ratio                |      | 0.50 |       |      | 0.50 |                      |      |      |      |      |      | 0.37 |
| Clearance Time (s)                |      | 3.0  |       |      | 3.0  |                      |      |      |      |      |      | 3.0  |
| Lane Grp Cap (vph)                |      | 810  |       |      | 830  |                      |      |      |      |      |      | 1191 |
| v/s Ratio Prot                    |      | 0.05 |       |      |      |                      |      |      |      |      |      |      |
| v/s Ratio Perm                    |      |      |       |      | 0.25 |                      |      |      |      |      |      | 0.19 |
| v/c Ratio                         |      | 0.11 |       |      | 0.51 |                      |      |      |      |      |      | 0.51 |
| Uniform Delay, d1                 |      | 7.9  |       |      | 10.0 |                      |      |      |      |      |      | 14.8 |
| Progression Factor                |      | 1.00 |       |      | 0.45 |                      |      |      |      |      |      | 0.78 |
| Incremental Delay, d2             |      | 0.3  |       |      | 1.6  |                      |      |      |      |      |      | 1.4  |
| Delay (s)                         |      | 8.2  |       |      | 6.1  |                      |      |      |      |      |      | 13.0 |
| Level of Service                  |      | A    |       |      | A    |                      |      |      |      |      |      | B    |
| Approach Delay (s)                |      | 8.2  |       |      | 6.1  |                      |      | 0.0  |      |      |      | 13.0 |
| Approach LOS                      |      | A    |       |      | A    |                      |      | A    |      |      |      | B    |
| <b>Intersection Summary</b>       |      |      |       |      |      |                      |      |      |      |      |      |      |
| HCM Average Control Delay         |      |      | 10.0  |      |      | HCM Level of Service |      |      |      |      |      | B    |
| HCM Volume to Capacity ratio      |      |      | 0.51  |      |      |                      |      |      |      |      |      |      |
| Actuated Cycle Length (s)         |      |      | 60.0  |      |      | Sum of lost time (s) |      |      |      | 8.0  |      |      |
| Intersection Capacity Utilization |      |      | 53.2% |      |      | ICU Level of Service |      |      |      |      |      | A    |
| Analysis Period (min)             |      |      | 15    |      |      |                      |      |      |      |      |      |      |
| c Critical Lane Group             |      |      |       |      |      |                      |      |      |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
 3427: L Street & 26th Street

6/1/2005

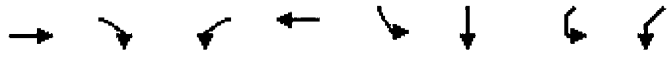


| Movement                  | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|---------------------------|------|-------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations       |      | ↕     |      |      | ↕    |      |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)        | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)       |      | 4.0   |      |      | 4.0  |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor         |      | 1.00  |      |      | 1.00 |      |      | 1.00 |      |      | 1.00  |      |
| Fr <sub>t</sub>           |      | 1.00  |      |      | 0.99 |      |      | 1.00 |      |      | 0.95  |      |
| Fl <sub>t</sub> Protected |      | 1.00  |      |      | 1.00 |      |      | 0.98 |      |      | 0.99  |      |
| Satd. Flow (prot)         |      | 1676  |      |      | 1650 |      |      | 1649 |      |      | 1588  |      |
| Fl <sub>t</sub> Permitted |      | 1.00  |      |      | 0.98 |      |      | 0.93 |      |      | 0.98  |      |
| Satd. Flow (perm)         |      | 1675  |      |      | 1626 |      |      | 1559 |      |      | 1559  |      |
| Volume (vph)              | 1    | 390   | 1    | 15   | 327  | 40   | 19   | 39   | 0    | 11   | 41    | 27   |
| Peak-hour factor, PHF     | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)           | 1    | 390   | 1    | 15   | 327  | 40   | 19   | 39   | 0    | 11   | 41    | 27   |
| RTOR Reduction (vph)      | 0    | 0     | 0    | 0    | 7    | 0    | 0    | 0    | 0    | 0    | 18    | 0    |
| Lane Group Flow (vph)     | 0    | 392   | 0    | 0    | 375  | 0    | 0    | 58   | 0    | 0    | 61    | 0    |
| Parking (#/hr)            | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Turn Type                 | Perm |       |      | Perm |      |      | Perm |      |      | Perm |       |      |
| Protected Phases          |      | 4     |      |      | 8    |      |      | 2    |      |      | 6     |      |
| Permitted Phases          | 4    |       |      | 8    |      |      | 2    |      |      | 6    |       |      |
| Actuated Green, G (s)     |      | 32.0  |      |      | 32.0 |      |      | 22.0 |      |      | 22.0  |      |
| Effective Green, g (s)    |      | 31.0  |      |      | 31.0 |      |      | 21.0 |      |      | 21.0  |      |
| Actuated g/C Ratio        |      | 0.52  |      |      | 0.52 |      |      | 0.35 |      |      | 0.35  |      |
| Clearance Time (s)        |      | 3.0   |      |      | 3.0  |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)        |      | 865   |      |      | 840  |      |      | 546  |      |      | 546   |      |
| v/s Ratio Prot            |      |       |      |      |      |      |      |      |      |      |       |      |
| v/s Ratio Perm            |      | c0.23 |      |      | 0.23 |      |      | 0.04 |      |      | c0.04 |      |
| v/c Ratio                 |      | 0.45  |      |      | 0.45 |      |      | 0.11 |      |      | 0.11  |      |
| Uniform Delay, d1         |      | 9.2   |      |      | 9.1  |      |      | 13.2 |      |      | 13.2  |      |
| Progression Factor        |      | 0.69  |      |      | 1.00 |      |      | 0.78 |      |      | 1.00  |      |
| Incremental Delay, d2     |      | 1.3   |      |      | 1.7  |      |      | 0.4  |      |      | 0.4   |      |
| Delay (s)                 |      | 7.7   |      |      | 10.8 |      |      | 10.6 |      |      | 13.6  |      |
| Level of Service          |      | A     |      |      | B    |      |      | B    |      |      | B     |      |
| Approach Delay (s)        |      | 7.7   |      |      | 10.8 |      |      | 10.6 |      |      | 13.6  |      |
| Approach LOS              |      | A     |      |      | B    |      |      | B    |      |      | B     |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 9.7   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.32  |                      |     |
| Actuated Cycle Length (s)         | 60.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 43.9% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3428: J Street & 29th St off ramp

6/1/2005



| Movement               | EBT   | EBR  | WBL   | WBT   | SBL   | SBT   | SWL2  | SWL   |
|------------------------|-------|------|-------|-------|-------|-------|-------|-------|
| Lane Configurations    | ↑↑    | ↑    |       | ↑     |       | ↑↑↑   |       | ↑↑    |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  |
| Total Lost time (s)    | 4.0   | 4.0  |       | 4.0   |       | 4.0   |       | 4.0   |
| Lane Util. Factor      | 0.95  | 1.00 |       | 1.00  |       | 0.91  |       | 0.97  |
| Frt                    | 1.00  | 0.85 |       | 1.00  |       | 1.00  |       | 1.00  |
| Flt Protected          | 1.00  | 1.00 |       | 0.95  |       | 0.99  |       | 0.95  |
| Satd. Flow (prot)      | 3539  | 1425 |       | 1770  |       | 4888  |       | 3433  |
| Flt Permitted          | 1.00  | 1.00 |       | 0.95  |       | 0.99  |       | 0.95  |
| Satd. Flow (perm)      | 3539  | 1425 |       | 1770  |       | 4888  |       | 3433  |
| Volume (vph)           | 866   | 318  | 143   | 0     | 34    | 267   | 419   | 650   |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)        | 866   | 318  | 143   | 0     | 34    | 267   | 419   | 650   |
| RTOR Reduction (vph)   | 0     | 74   | 0     | 0     | 0     | 0     | 0     | 0     |
| Lane Group Flow (vph)  | 866   | 244  | 0     | 143   | 0     | 301   | 0     | 1069  |
| Parking (#/hr)         |       | 0    |       |       |       | 0     |       |       |
| Turn Type              |       | Perm | Split |       | Split |       | Split |       |
| Protected Phases       | 4     |      | 8     | 8     | 6     | 6     | 2     | 2     |
| Permitted Phases       |       | 4    |       |       |       |       |       |       |
| Actuated Green, G (s)  | 22.0  | 22.0 |       | 9.0   |       | 7.0   |       | 30.0  |
| Effective Green, g (s) | 21.0  | 21.0 |       | 8.0   |       | 6.0   |       | 29.0  |
| Actuated g/C Ratio     | 0.26  | 0.26 |       | 0.10  |       | 0.08  |       | 0.36  |
| Clearance Time (s)     | 3.0   | 3.0  |       | 3.0   |       | 3.0   |       | 3.0   |
| Lane Grp Cap (vph)     | 929   | 374  |       | 177   |       | 367   |       | 1244  |
| v/s Ratio Prot         | c0.24 |      |       | c0.08 |       | c0.06 |       | c0.31 |
| v/s Ratio Perm         |       | 0.17 |       |       |       |       |       |       |
| v/c Ratio              | 0.93  | 0.65 |       | 0.81  |       | 0.82  |       | 0.86  |
| Uniform Delay, d1      | 28.8  | 26.3 |       | 35.2  |       | 36.5  |       | 23.6  |
| Progression Factor     | 0.63  | 0.37 |       | 0.43  |       | 1.00  |       | 1.00  |
| Incremental Delay, d2  | 15.9  | 7.8  |       | 27.0  |       | 18.3  |       | 7.9   |
| Delay (s)              | 34.2  | 17.5 |       | 42.1  |       | 54.7  |       | 31.5  |
| Level of Service       | C     | B    |       | D     |       | D     |       | C     |
| Approach Delay (s)     | 29.7  |      |       | 42.1  |       | 54.7  |       | 31.5  |
| Approach LOS           | C     |      |       | D     |       | D     |       | C     |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 33.9  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.87  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 16.0 |
| Intersection Capacity Utilization | 81.5% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3429: J Street & Alhambra

6/1/2005



| Movement                  | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|---------------------------|-------|-------|------|-------|-------|------|------|------|------|------|-------|------|
| Lane Configurations       |       | ↕↕    |      | ↗     | ↖     | ↗    |      | ↕↕   |      |      | ↕↕    |      |
| Ideal Flow (vphpl)        | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)       |       | 4.0   |      | 4.0   | 4.0   | 4.0  |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor         |       | 0.95  |      | 0.95  | 0.95  | 1.00 |      | 0.95 |      |      | 0.95  |      |
| Fr <sub>t</sub>           |       | 0.98  |      | 1.00  | 1.00  | 0.85 |      | 0.97 |      |      | 1.00  |      |
| Fl <sub>t</sub> Protected |       | 0.99  |      | 0.95  | 0.98  | 1.00 |      | 1.00 |      |      | 1.00  |      |
| Satd. Flow (prot)         |       | 3266  |      | 1681  | 1740  | 1425 |      | 3272 |      |      | 3353  |      |
| Fl <sub>t</sub> Permitted |       | 0.99  |      | 0.95  | 0.98  | 1.00 |      | 1.00 |      |      | 0.93  |      |
| Satd. Flow (perm)         |       | 3266  |      | 1681  | 1740  | 1425 |      | 3272 |      |      | 3120  |      |
| Volume (vph)              | 152   | 1079  | 228  | 456   | 236   | 103  | 0    | 253  | 55   | 19   | 325   | 0    |
| Peak-hour factor, PHF     | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)           | 152   | 1079  | 228  | 456   | 236   | 103  | 0    | 253  | 55   | 19   | 325   | 0    |
| RTOR Reduction (vph)      | 0     | 19    | 0    | 0     | 0     | 82   | 0    | 23   | 0    | 0    | 0     | 0    |
| Lane Group Flow (vph)     | 0     | 1440  | 0    | 337   | 355   | 21   | 0    | 285  | 0    | 0    | 344   | 0    |
| Parking (#/hr)            |       | 0     | 0    |       |       | 0    |      | 0    | 0    |      | 0     |      |
| Turn Type                 | Split |       |      | Split |       | Perm | Perm |      |      | Perm |       |      |
| Protected Phases          | 4     | 4     |      | 8     | 8     |      |      | 2    |      |      | 6     |      |
| Permitted Phases          |       |       |      |       |       | 8    | 2    |      |      | 6    |       |      |
| Actuated Green, G (s)     |       | 36.0  |      | 17.0  | 17.0  | 17.0 |      | 18.0 |      |      | 18.0  |      |
| Effective Green, g (s)    |       | 35.0  |      | 16.0  | 16.0  | 16.0 |      | 17.0 |      |      | 17.0  |      |
| Actuated g/C Ratio        |       | 0.44  |      | 0.20  | 0.20  | 0.20 |      | 0.21 |      |      | 0.21  |      |
| Clearance Time (s)        |       | 3.0   |      | 3.0   | 3.0   | 3.0  |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)        |       | 1429  |      | 336   | 348   | 285  |      | 695  |      |      | 663   |      |
| v/s Ratio Prot            |       | c0.44 |      | 0.20  | c0.20 |      |      | 0.09 |      |      |       |      |
| v/s Ratio Perm            |       |       |      |       |       | 0.01 |      |      |      |      | c0.11 |      |
| v/c Ratio                 |       | 1.01  |      | 1.00  | 1.02  | 0.07 |      | 0.41 |      |      | 0.52  |      |
| Uniform Delay, d1         |       | 22.5  |      | 32.0  | 32.0  | 26.0 |      | 27.2 |      |      | 27.9  |      |
| Progression Factor        |       | 0.38  |      | 1.00  | 1.00  | 1.00 |      | 0.52 |      |      | 1.00  |      |
| Incremental Delay, d2     |       | 23.7  |      | 49.8  | 53.5  | 0.5  |      | 1.7  |      |      | 2.9   |      |
| Delay (s)                 |       | 32.2  |      | 81.8  | 85.5  | 26.5 |      | 15.7 |      |      | 30.8  |      |
| Level of Service          |       | C     |      | F     | F     | C    |      | B    |      |      | C     |      |
| Approach Delay (s)        |       | 32.2  |      |       | 76.3  |      |      | 15.7 |      |      | 30.8  |      |
| Approach LOS              |       | C     |      |       | E     |      |      | B    |      |      | C     |      |

**Intersection Summary**

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 42.4  | HCM Level of Service | D    |
| HCM Volume to Capacity ratio      | 0.89  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 92.0% | ICU Level of Service | F    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3435: N Street & 29th Street

6/1/2005



| Movement               | EBT   | EBR  | EBR2 | WBL2  | WBL   | WBT   | SBL2 | SBL   | SBT  | SBR  |
|------------------------|-------|------|------|-------|-------|-------|------|-------|------|------|
| Lane Configurations    | ↔     | ↔    |      |       | ↔     | ↔     |      | ↔     | ↔    |      |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900  | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    | 4.0   | 4.0  |      |       | 4.0   | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor      | 0.95  | 0.95 |      |       | 0.95  | 0.95  |      | 0.97  | 0.95 |      |
| Fr't                   | 0.95  | 0.85 |      |       | 1.00  | 1.00  |      | 1.00  | 1.00 |      |
| Flt Protected          | 1.00  | 1.00 |      |       | 0.95  | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)      | 1507  | 1354 |      |       | 1681  | 1770  |      | 3433  | 3352 |      |
| Flt Permitted          | 1.00  | 1.00 |      |       | 0.95  | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)      | 1507  | 1354 |      |       | 1681  | 1770  |      | 3433  | 3352 |      |
| Volume (vph)           | 73    | 99   | 54   | 147   | 110   | 760   | 85   | 975   | 378  | 8    |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 73    | 99   | 54   | 147   | 110   | 760   | 85   | 975   | 378  | 8    |
| RTOR Reduction (vph)   | 0     | 42   | 0    | 0     | 0     | 0     | 0    | 0     | 2    | 0    |
| Lane Group Flow (vph)  | 114   | 70   | 0    | 0     | 257   | 760   | 0    | 1060  | 384  | 0    |
| Parking (#/hr)         | 0     | 0    | 0    |       |       |       |      |       | 0    |      |
| Turn Type              |       | Prot |      | Split | Split |       | Perm | Perm  |      |      |
| Protected Phases       | 4     | 4    |      | 8     | 8     | 8     |      |       | 6    |      |
| Permitted Phases       |       |      |      |       |       |       | 6    | 6     |      |      |
| Actuated Green, G (s)  | 17.0  | 17.0 |      |       | 30.0  | 30.0  |      | 24.0  | 24.0 |      |
| Effective Green, g (s) | 16.0  | 16.0 |      |       | 29.0  | 29.0  |      | 23.0  | 23.0 |      |
| Actuated g/C Ratio     | 0.20  | 0.20 |      |       | 0.36  | 0.36  |      | 0.29  | 0.29 |      |
| Clearance Time (s)     | 3.0   | 3.0  |      |       | 3.0   | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     | 301   | 271  |      |       | 609   | 642   |      | 987   | 964  |      |
| v/s Ratio Prot         | c0.08 | 0.05 |      |       | 0.15  | c0.43 |      |       | 0.11 |      |
| v/s Ratio Perm         |       |      |      |       |       |       |      | c0.31 |      |      |
| v/c Ratio              | 0.38  | 0.26 |      |       | 0.42  | 1.18  |      | 1.07  | 0.40 |      |
| Uniform Delay, d1      | 27.7  | 27.0 |      |       | 19.2  | 25.5  |      | 28.5  | 22.9 |      |
| Progression Factor     | 0.86  | 0.81 |      |       | 0.81  | 0.84  |      | 0.82  | 0.77 |      |
| Incremental Delay, d2  | 3.1   | 2.0  |      |       | 1.1   | 91.1  |      | 48.0  | 1.0  |      |
| Delay (s)              | 27.0  | 23.8 |      |       | 16.6  | 112.5 |      | 71.3  | 18.7 |      |
| Level of Service       | C     | C    |      |       | B     | F     |      | E     | B    |      |
| Approach Delay (s)     | 25.4  |      |      |       |       | 88.3  |      |       | 57.3 |      |
| Approach LOS           | C     |      |      |       |       | F     |      |       | E    |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 66.3  | HCM Level of Service | E    |
| HCM Volume to Capacity ratio      | 0.96  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 87.1% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3436: Capitol & Alhambra

6/1/2005



| Movement               | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|-------|-------|------|-------|-------|------|------|-------|------|------|------|------|
| Lane Configurations    |       | ↔     |      |       | ↔     |      | ↖    | ↗     | ↗    | ↖    | ↗    | ↖    |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |       | 4.0   |      |       | 4.0   |      | 4.0  | 4.0   | 4.0  | 4.0  | 4.0  | 4.0  |
| Lane Util. Factor      |       | 0.95  |      |       | 0.95  |      | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Fr't                   |       | 0.98  |      |       | 0.98  |      | 1.00 | 1.00  | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected          |       | 0.99  |      |       | 1.00  |      | 0.95 | 1.00  | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot)      |       | 3268  |      |       | 3289  |      | 1770 | 1676  | 1425 | 1770 | 1676 | 1425 |
| Flt Permitted          |       | 0.99  |      |       | 1.00  |      | 0.37 | 1.00  | 1.00 | 0.20 | 1.00 | 1.00 |
| Satd. Flow (perm)      |       | 3268  |      |       | 3289  |      | 697  | 1676  | 1425 | 368  | 1676 | 1425 |
| Volume (vph)           | 106   | 295   | 50   | 29    | 756   | 123  | 51   | 566   | 101  | 101  | 393  | 51   |
| Peak-hour factor, PHF  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 106   | 295   | 50   | 29    | 756   | 123  | 51   | 566   | 101  | 101  | 393  | 51   |
| RTOR Reduction (vph)   | 0     | 12    | 0    | 0     | 15    | 0    | 0    | 0     | 40   | 0    | 0    | 29   |
| Lane Group Flow (vph)  | 0     | 439   | 0    | 0     | 893   | 0    | 51   | 566   | 61   | 101  | 393  | 22   |
| Parking (#/hr)         |       | 0     | 0    |       | 0     | 0    |      | 0     | 0    |      | 0    | 0    |
| Turn Type              | Split |       |      | Split |       |      | Perm |       | Perm | Perm |      | Perm |
| Protected Phases       | 4     | 4     |      | 8     | 8     |      |      | 2     |      |      |      | 6    |
| Permitted Phases       |       |       |      |       |       |      | 2    |       | 2    | 6    |      | 6    |
| Actuated Green, G (s)  |       | 13.0  |      |       | 25.0  |      | 33.0 | 33.0  | 33.0 | 33.0 | 33.0 | 33.0 |
| Effective Green, g (s) |       | 12.0  |      |       | 24.0  |      | 32.0 | 32.0  | 32.0 | 32.0 | 32.0 | 32.0 |
| Actuated g/C Ratio     |       | 0.15  |      |       | 0.30  |      | 0.40 | 0.40  | 0.40 | 0.40 | 0.40 | 0.40 |
| Clearance Time (s)     |       | 3.0   |      |       | 3.0   |      | 3.0  | 3.0   | 3.0  | 3.0  | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |       | 490   |      |       | 987   |      | 279  | 670   | 570  | 147  | 670  | 570  |
| v/s Ratio Prot         |       | c0.13 |      |       | c0.27 |      |      | c0.34 |      |      |      | 0.23 |
| v/s Ratio Perm         |       |       |      |       |       |      | 0.07 |       | 0.04 | 0.27 |      | 0.02 |
| v/c Ratio              |       | 0.90  |      |       | 0.90  |      | 0.18 | 0.84  | 0.11 | 0.69 | 0.59 | 0.04 |
| Uniform Delay, d1      |       | 33.4  |      |       | 26.9  |      | 15.5 | 21.7  | 15.0 | 19.9 | 18.8 | 14.6 |
| Progression Factor     |       | 0.96  |      |       | 1.00  |      | 0.80 | 0.69  | 0.72 | 0.73 | 0.75 | 0.94 |
| Incremental Delay, d2  |       | 21.0  |      |       | 13.2  |      | 0.7  | 6.8   | 0.2  | 20.9 | 3.3  | 0.1  |
| Delay (s)              |       | 52.9  |      |       | 40.1  |      | 13.1 | 21.8  | 11.0 | 35.5 | 17.5 | 13.9 |
| Level of Service       |       | D     |      |       | D     |      | B    | C     | B    | D    | B    | B    |
| Approach Delay (s)     |       | 52.9  |      |       | 40.1  |      |      | 19.7  |      |      | 20.5 |      |
| Approach LOS           |       | D     |      |       | D     |      |      | B     |      |      | C    |      |

| Intersection Summary              |       |                           |
|-----------------------------------|-------|---------------------------|
| HCM Average Control Delay         | 32.6  | HCM Level of Service C    |
| HCM Volume to Capacity ratio      | 0.87  |                           |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) 12.0 |
| Intersection Capacity Utilization | 87.2% | ICU Level of Service E    |
| Analysis Period (min)             | 15    |                           |
| c Critical Lane Group             |       |                           |

HCM Signalized Intersection Capacity Analysis  
 3437: P Street & P St off ramp

6/1/2005



| Movement               | EBT  | EBR  | WBL  | WBT   | SBL   | SBT   | SBR  | SWL2  | SWL  | SWR  |
|------------------------|------|------|------|-------|-------|-------|------|-------|------|------|
| Lane Configurations    | ↑    | ↗    | ↖    | ↑     |       | ↑↑↑   |      | ↖     | ↖↖   |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900  | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    | 4.0  | 4.0  | 4.0  | 4.0   |       | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor      | 1.00 | 1.00 | 1.00 | 1.00  |       | 0.91  |      | 0.91  | 0.91 |      |
| Frt                    | 1.00 | 0.85 | 1.00 | 1.00  |       | 0.97  |      | 1.00  | 0.96 |      |
| Flt Protected          | 1.00 | 1.00 | 0.95 | 1.00  |       | 0.99  |      | 0.95  | 0.96 |      |
| Satd. Flow (prot)      | 1676 | 1425 | 1593 | 1676  |       | 4757  |      | 1610  | 3139 |      |
| Flt Permitted          | 1.00 | 1.00 | 0.43 | 1.00  |       | 0.99  |      | 0.95  | 0.96 |      |
| Satd. Flow (perm)      | 1676 | 1425 | 728  | 1676  |       | 4757  |      | 1610  | 3139 |      |
| Volume (vph)           | 316  | 89   | 187  | 436   | 60    | 352   | 88   | 485   | 292  | 166  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 316  | 89   | 187  | 436   | 60    | 352   | 88   | 485   | 292  | 166  |
| RTOR Reduction (vph)   | 0    | 57   | 0    | 0     | 0     | 42    | 0    | 0     | 0    | 0    |
| Lane Group Flow (vph)  | 316  | 32   | 187  | 436   | 0     | 458   | 0    | 322   | 621  | 0    |
| Parking (#/hr)         | 0    | 0    | 0    | 0     | 0     | 0     | 0    | 0     | 0    | 0    |
| Turn Type              |      | Perm | Perm |       | Split |       |      | Split |      |      |
| Protected Phases       | 4    |      |      | 8     | 6     | 6     |      | 2     | 2    |      |
| Permitted Phases       |      | 4    | 8    |       |       |       |      |       |      |      |
| Actuated Green, G (s)  | 30.0 | 30.0 | 30.0 | 30.0  |       | 18.0  |      | 23.0  | 23.0 |      |
| Effective Green, g (s) | 29.0 | 29.0 | 29.0 | 29.0  |       | 17.0  |      | 22.0  | 22.0 |      |
| Actuated g/C Ratio     | 0.36 | 0.36 | 0.36 | 0.36  |       | 0.21  |      | 0.28  | 0.28 |      |
| Clearance Time (s)     | 3.0  | 3.0  | 3.0  | 3.0   |       | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     | 608  | 517  | 264  | 608   |       | 1011  |      | 443   | 863  |      |
| v/s Ratio Prot         | 0.19 |      |      | c0.26 |       | c0.10 |      | c0.20 | 0.20 |      |
| v/s Ratio Perm         |      | 0.02 | 0.26 |       |       |       |      |       |      |      |
| v/c Ratio              | 0.52 | 0.06 | 0.71 | 0.72  |       | 0.45  |      | 0.73  | 0.72 |      |
| Uniform Delay, d1      | 20.0 | 16.6 | 21.9 | 22.0  |       | 27.5  |      | 26.3  | 26.2 |      |
| Progression Factor     | 1.00 | 1.00 | 0.91 | 0.91  |       | 1.03  |      | 1.00  | 1.00 |      |
| Incremental Delay, d2  | 3.2  | 0.2  | 13.7 | 6.5   |       | 1.4   |      | 10.0  | 5.1  |      |
| Delay (s)              | 23.2 | 16.9 | 33.6 | 26.5  |       | 29.6  |      | 36.3  | 31.4 |      |
| Level of Service       | C    | B    | C    | C     |       | C     |      | D     | C    |      |
| Approach Delay (s)     | 21.8 |      |      | 28.6  |       | 29.6  |      |       | 33.0 |      |
| Approach LOS           | C    |      |      | C     |       | C     |      |       | C    |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 29.4  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.65  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 68.6% | ICU Level of Service | C    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |



HCM Signalized Intersection Capacity Analysis  
 3438: P Street & Alhambra

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL   | WBT  | WBR  | NBL  | NBT  | NBR   | SBL  | SBT  | SBR   |
|------------------------|------|------|------|-------|------|------|------|------|-------|------|------|-------|
| Lane Configurations    |      | ↔    |      |       | ↔    | ↗    | ↖    | ↕    |       | ↖    | ↗    |       |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  |
| Total Lost time (s)    |      | 4.0  |      |       | 4.0  | 4.0  | 4.0  | 4.0  |       | 4.0  | 4.0  |       |
| Lane Util. Factor      |      | 0.95 |      |       | 0.95 | 1.00 | 1.00 | 1.00 |       | 1.00 | 1.00 |       |
| Fr't                   |      | 1.00 |      |       | 1.00 | 0.85 | 1.00 | 0.99 |       | 1.00 | 0.96 |       |
| Flt Protected          |      | 1.00 |      |       | 1.00 | 1.00 | 0.95 | 1.00 |       | 0.95 | 1.00 |       |
| Satd. Flow (prot)      |      | 3539 |      |       | 3526 | 1583 | 1770 | 1853 |       | 1770 | 1797 |       |
| Flt Permitted          |      | 1.00 |      |       | 0.79 | 1.00 | 0.95 | 1.00 |       | 0.95 | 1.00 |       |
| Satd. Flow (perm)      |      | 3539 |      |       | 2806 | 1583 | 1770 | 1853 |       | 1770 | 1797 |       |
| Volume (vph)           | 0    | 778  | 0    | 74    | 881  | 245  | 66   | 364  | 13    | 104  | 255  | 79    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  |
| Adj. Flow (vph)        | 0    | 778  | 0    | 74    | 881  | 245  | 66   | 364  | 13    | 104  | 255  | 79    |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0     | 0    | 138  | 0    | 1    | 0     | 0    | 14   | 0     |
| Lane Group Flow (vph)  | 0    | 778  | 0    | 0     | 955  | 107  | 66   | 376  | 0     | 104  | 320  | 0     |
| Turn Type              | Perm |      |      | Perm  |      |      | Perm | Prot | Prot  |      |      |       |
| Protected Phases       | 4    |      |      | 8     |      |      | 5    | 2    | 1     |      | 6    |       |
| Permitted Phases       | 4    |      |      | 8     |      |      | 8    |      |       |      |      |       |
| Actuated Green, G (s)  | 36.0 |      |      | 36.0  |      |      | 36.0 | 8.0  | 25.0  | 10.0 |      | 27.0  |
| Effective Green, g (s) | 35.0 |      |      | 35.0  |      |      | 35.0 | 7.0  | 24.0  | 9.0  |      | 26.0  |
| Actuated g/C Ratio     | 0.44 |      |      | 0.44  |      |      | 0.44 | 0.09 | 0.30  | 0.11 |      | 0.32  |
| Clearance Time (s)     | 3.0  |      |      | 3.0   |      |      | 3.0  | 3.0  | 3.0   | 3.0  |      | 3.0   |
| Lane Grp Cap (vph)     | 1548 |      |      | 1228  |      |      | 693  | 155  | 556   | 199  |      | 584   |
| v/s Ratio Prot         | 0.22 |      |      |       |      |      |      | 0.04 | c0.20 | 0.06 |      | c0.18 |
| v/s Ratio Perm         |      |      |      | c0.34 |      |      | 0.07 |      |       |      |      |       |
| v/c Ratio              | 0.50 |      |      | 0.78  |      |      | 0.15 | 0.43 | 0.68  | 0.52 |      | 0.55  |
| Uniform Delay, d1      | 16.2 |      |      | 19.2  |      |      | 13.6 | 34.6 | 24.6  | 33.5 |      | 22.2  |
| Progression Factor     | 0.39 |      |      | 1.00  |      |      | 1.00 | 1.00 | 1.00  | 0.76 |      | 0.86  |
| Incremental Delay, d2  | 0.8  |      |      | 4.9   |      |      | 0.5  | 8.3  | 6.5   | 7.2  |      | 2.8   |
| Delay (s)              | 7.0  |      |      | 24.1  |      |      | 14.0 | 42.9 | 31.0  | 32.7 |      | 21.8  |
| Level of Service       | A    |      |      | C     |      |      | B    | D    | C     | C    |      | C     |
| Approach Delay (s)     | 7.0  |      |      | 22.0  |      |      |      |      | 32.8  | 24.4 |      |       |
| Approach LOS           | A    |      |      | C     |      |      |      |      | C     | C    |      |       |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 20.0  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.72  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 87.0% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 3444: Q Street & 29th Street

6/1/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|-------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↔     |      | ↔    | ↔    |      |      |      |      |      | ↕↕↕  |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      |      |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00  |      |      |      |      |      |      |      |      | 0.91 |      |
| Frt                    |      | 0.98  |      |      |      |      |      |      |      |      | 0.96 |      |
| Flt Protected          |      | 1.00  |      |      |      |      |      |      |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 1825  |      |      |      |      |      |      |      |      | 4856 |      |
| Flt Permitted          |      | 1.00  |      |      |      |      |      |      |      |      | 1.00 |      |
| Satd. Flow (perm)      |      | 1825  |      |      |      |      |      |      |      |      | 4856 |      |
| Volume (vph)           | 0    | 234   | 41   | 0    | 0    | 0    | 0    | 0    | 0    | 37   | 795  | 340  |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 234   | 41   | 0    | 0    | 0    | 0    | 0    | 0    | 37   | 795  | 340  |
| RTOR Reduction (vph)   | 0    | 8     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 92   | 0    |
| Lane Group Flow (vph)  | 0    | 267   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1080 | 0    |
| Turn Type              |      |       |      | Perm |      |      |      |      |      |      | Perm |      |
| Protected Phases       |      | 4     |      |      | 8    |      |      |      |      |      |      | 6    |
| Permitted Phases       |      |       |      | 8    |      |      |      |      |      |      | 6    |      |
| Actuated Green, G (s)  |      | 35.0  |      |      |      |      |      |      |      |      | 39.0 |      |
| Effective Green, g (s) |      | 34.0  |      |      |      |      |      |      |      |      | 38.0 |      |
| Actuated g/C Ratio     |      | 0.42  |      |      |      |      |      |      |      |      | 0.48 |      |
| Clearance Time (s)     |      | 3.0   |      |      |      |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 776   |      |      |      |      |      |      |      |      | 2307 |      |
| v/s Ratio Prot         |      | c0.15 |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |       |      |      |      |      |      |      |      |      | 0.22 |      |
| v/c Ratio              |      | 0.34  |      |      |      |      |      |      |      |      | 0.47 |      |
| Uniform Delay, d1      |      | 15.5  |      |      |      |      |      |      |      |      | 14.2 |      |
| Progression Factor     |      | 1.00  |      |      |      |      |      |      |      |      | 0.55 |      |
| Incremental Delay, d2  |      | 1.2   |      |      |      |      |      |      |      |      | 0.6  |      |
| Delay (s)              |      | 16.7  |      |      |      |      |      |      |      |      | 8.4  |      |
| Level of Service       |      | B     |      |      |      |      |      |      |      |      | A    |      |
| Approach Delay (s)     |      | 16.7  |      |      | 0.0  |      |      | 0.0  |      |      | 8.4  |      |
| Approach LOS           |      | B     |      |      | A    |      |      | A    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.0  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.41  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 45.2% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 3467: N Street & Alhambra

6/1/2005



| Movement                  | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|---------------------------|------|-------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations       |      | ↕     |      |      | ↕    |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)        | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |      | 4.0   |      |      | 4.0  |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor         |      | 1.00  |      |      | 1.00 |      |      | 1.00  |      |      | 1.00 |      |
| Fr <sub>t</sub>           |      | 0.97  |      |      | 0.99 |      |      | 0.99  |      |      | 0.99 |      |
| Fl <sub>t</sub> Protected |      | 0.98  |      |      | 0.99 |      |      | 1.00  |      |      | 1.00 |      |
| Satd. Flow (prot)         |      | 1596  |      |      | 1640 |      |      | 1649  |      |      | 1662 |      |
| Fl <sub>t</sub> Permitted |      | 0.66  |      |      | 0.88 |      |      | 0.97  |      |      | 0.98 |      |
| Satd. Flow (perm)         |      | 1086  |      |      | 1453 |      |      | 1607  |      |      | 1638 |      |
| Volume (vph)              | 220  | 150   | 85   | 55   | 225  | 30   | 26   | 508   | 63   | 12   | 419  | 24   |
| Peak-hour factor, PHF     | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 220  | 150   | 85   | 55   | 225  | 30   | 26   | 508   | 63   | 12   | 419  | 24   |
| RTOR Reduction (vph)      | 0    | 10    | 0    | 0    | 5    | 0    | 0    | 5     | 0    | 0    | 2    | 0    |
| Lane Group Flow (vph)     | 0    | 445   | 0    | 0    | 305  | 0    | 0    | 592   | 0    | 0    | 453  | 0    |
| Parking (#/hr)            | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type                 | Perm |       |      | Perm |      |      | Perm |       |      | Perm |      |      |
| Protected Phases          |      | 4     |      |      | 8    |      |      | 2     |      |      | 6    |      |
| Permitted Phases          | 4    |       |      | 8    |      |      | 2    |       |      | 6    |      |      |
| Actuated Green, G (s)     |      | 38.0  |      |      | 38.0 |      |      | 36.0  |      |      | 36.0 |      |
| Effective Green, g (s)    |      | 37.0  |      |      | 37.0 |      |      | 35.0  |      |      | 35.0 |      |
| Actuated g/C Ratio        |      | 0.46  |      |      | 0.46 |      |      | 0.44  |      |      | 0.44 |      |
| Clearance Time (s)        |      | 3.0   |      |      | 3.0  |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)        |      | 502   |      |      | 672  |      |      | 703   |      |      | 717  |      |
| v/s Ratio Prot            |      |       |      |      |      |      |      |       |      |      |      |      |
| v/s Ratio Perm            |      | c0.41 |      |      | 0.21 |      |      | c0.37 |      |      | 0.28 |      |
| v/c Ratio                 |      | 0.89  |      |      | 0.45 |      |      | 0.84  |      |      | 0.63 |      |
| Uniform Delay, d1         |      | 19.6  |      |      | 14.6 |      |      | 20.0  |      |      | 17.5 |      |
| Progression Factor        |      | 1.06  |      |      | 1.00 |      |      | 0.46  |      |      | 0.52 |      |
| Incremental Delay, d2     |      | 19.1  |      |      | 2.2  |      |      | 10.3  |      |      | 3.2  |      |
| Delay (s)                 |      | 39.9  |      |      | 16.8 |      |      | 19.4  |      |      | 12.3 |      |
| Level of Service          |      | D     |      |      | B    |      |      | B     |      |      | B    |      |
| Approach Delay (s)        |      | 39.9  |      |      | 16.8 |      |      | 19.4  |      |      | 12.3 |      |
| Approach LOS              |      | D     |      |      | B    |      |      | B     |      |      | B    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 22.3  | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 0.86  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 94.7% | ICU Level of Service | F   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
5802: K Street & 29th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑    | ↗    | ↖    | ↑     |      |      |      |      |      | ↑↑   | ↗    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  | 4.0  | 4.0   |      |      |      |      |      | 4.0  | 4.0  |
| Lane Util. Factor      |      | 1.00 | 1.00 | 1.00 | 1.00  |      |      |      |      |      | 0.95 | 1.00 |
| Frt                    |      | 1.00 | 0.85 | 1.00 | 1.00  |      |      |      |      |      | 1.00 | 0.85 |
| Flt Protected          |      | 1.00 | 1.00 | 0.95 | 1.00  |      |      |      |      |      | 0.99 | 1.00 |
| Satd. Flow (prot)      |      | 1863 | 1583 | 1770 | 1863  |      |      |      |      |      | 3520 | 1583 |
| Flt Permitted          |      | 1.00 | 1.00 | 0.70 | 1.00  |      |      |      |      |      | 0.99 | 1.00 |
| Satd. Flow (perm)      |      | 1863 | 1583 | 1295 | 1863  |      |      |      |      |      | 3520 | 1583 |
| Volume (vph)           | 0    | 95   | 249  | 199  | 562   | 0    | 0    | 0    | 0    | 92   | 750  | 451  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 95   | 249  | 199  | 562   | 0    | 0    | 0    | 0    | 92   | 750  | 451  |
| RTOR Reduction (vph)   | 0    | 0    | 45   | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 152  |
| Lane Group Flow (vph)  | 0    | 95   | 204  | 199  | 562   | 0    | 0    | 0    | 0    | 0    | 842  | 299  |
| Turn Type              |      |      | Perm | Perm |       |      |      |      |      | Perm |      | Perm |
| Protected Phases       |      | 4    |      |      | 8     |      |      |      |      |      | 6    |      |
| Permitted Phases       |      |      | 4    | 8    |       |      |      |      |      | 6    |      | 6    |
| Actuated Green, G (s)  |      | 41.0 | 41.0 | 41.0 | 41.0  |      |      |      |      |      | 33.0 | 33.0 |
| Effective Green, g (s) |      | 40.0 | 40.0 | 40.0 | 40.0  |      |      |      |      |      | 32.0 | 32.0 |
| Actuated g/C Ratio     |      | 0.50 | 0.50 | 0.50 | 0.50  |      |      |      |      |      | 0.40 | 0.40 |
| Clearance Time (s)     |      | 3.0  | 3.0  | 3.0  | 3.0   |      |      |      |      |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |      | 932  | 792  | 648  | 932   |      |      |      |      |      | 1408 | 633  |
| v/s Ratio Prot         |      | 0.05 |      |      | c0.30 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      | 0.13 | 0.15 |       |      |      |      |      |      | 0.24 | 0.19 |
| v/c Ratio              |      | 0.10 | 0.26 | 0.31 | 0.60  |      |      |      |      |      | 0.60 | 0.47 |
| Uniform Delay, d1      |      | 10.5 | 11.5 | 11.8 | 14.3  |      |      |      |      |      | 18.9 | 17.8 |
| Progression Factor     |      | 0.89 | 0.89 | 0.58 | 0.56  |      |      |      |      |      | 1.03 | 0.66 |
| Incremental Delay, d2  |      | 0.2  | 0.8  | 1.1  | 2.6   |      |      |      |      |      | 1.1  | 1.3  |
| Delay (s)              |      | 9.6  | 11.0 | 8.0  | 10.6  |      |      |      |      |      | 20.6 | 12.9 |
| Level of Service       |      | A    | B    | A    | B     |      |      |      |      |      | C    | B    |
| Approach Delay (s)     |      | 10.6 |      |      | 9.9   |      |      | 0.0  |      |      | 17.9 |      |
| Approach LOS           |      | B    |      |      | A     |      |      | A    |      |      | B    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 14.3  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.60  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 64.2% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 5848: J Street & 30th Street

6/1/2005



| Movement               | EBL2 | EBL  | EBT   | WBT   | WBR  | NBL2 | NBL  | NBT   | NBR  |
|------------------------|------|------|-------|-------|------|------|------|-------|------|
| Lane Configurations    |      |      |       |       |      |      |      |       |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900  | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0   | 4.0   |      |      | 4.0  | 4.0   |      |
| Lane Util. Factor      |      | 1.00 | 0.95  | 1.00  |      |      | 0.91 | 0.91  |      |
| Fr't                   |      | 1.00 | 1.00  | 0.92  |      |      | 1.00 | 0.90  |      |
| Flt Protected          |      | 0.95 | 1.00  | 1.00  |      |      | 0.95 | 1.00  |      |
| Satd. Flow (prot)      |      | 1770 | 3362  | 1543  |      |      | 1610 | 3050  |      |
| Flt Permitted          |      | 0.95 | 1.00  | 1.00  |      |      | 0.95 | 1.00  |      |
| Satd. Flow (perm)      |      | 1770 | 3362  | 1543  |      |      | 1610 | 3050  |      |
| Volume (vph)           | 120  | 128  | 1041  | 102   | 146  | 42   | 242  | 213   | 432  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 120  | 128  | 1041  | 102   | 146  | 42   | 242  | 213   | 432  |
| RTOR Reduction (vph)   | 0    | 0    | 0     | 0     | 0    | 0    | 0    | 77    | 0    |
| Lane Group Flow (vph)  | 0    | 248  | 1041  | 248   | 0    | 0    | 284  | 568   | 0    |
| Parking (#/hr)         |      |      | 0     | 0     | 0    |      |      |       | 0    |
| Turn Type              | Prot | Prot |       |       |      | Perm | Perm |       |      |
| Protected Phases       | 7    | 7    | 4     | 8     |      |      |      | 2     |      |
| Permitted Phases       |      |      |       |       |      | 2    | 2    |       |      |
| Actuated Green, G (s)  |      | 22.0 | 49.0  | 24.0  |      |      | 25.0 | 25.0  |      |
| Effective Green, g (s) |      | 21.0 | 48.0  | 23.0  |      |      | 24.0 | 24.0  |      |
| Actuated g/C Ratio     |      | 0.26 | 0.60  | 0.29  |      |      | 0.30 | 0.30  |      |
| Clearance Time (s)     |      | 3.0  | 3.0   | 3.0   |      |      | 3.0  | 3.0   |      |
| Lane Grp Cap (vph)     |      | 465  | 2017  | 444   |      |      | 483  | 915   |      |
| v/s Ratio Prot         |      | 0.14 | c0.31 | c0.16 |      |      |      | c0.19 |      |
| v/s Ratio Perm         |      |      |       |       |      |      | 0.18 |       |      |
| v/c Ratio              |      | 0.53 | 0.52  | 0.56  |      |      | 0.59 | 0.62  |      |
| Uniform Delay, d1      |      | 25.3 | 9.3   | 24.2  |      |      | 23.8 | 24.1  |      |
| Progression Factor     |      | 1.00 | 0.75  | 1.22  |      |      | 0.42 | 0.30  |      |
| Incremental Delay, d2  |      | 1.8  | 0.4   | 1.4   |      |      | 4.5  | 2.8   |      |
| Delay (s)              |      | 27.2 | 7.3   | 30.9  |      |      | 14.6 | 10.0  |      |
| Level of Service       |      | C    | A     | C     |      |      | B    | B     |      |
| Approach Delay (s)     |      |      | 11.1  | 30.9  |      |      |      | 11.4  |      |
| Approach LOS           |      |      | B     | C     |      |      |      | B     |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 13.2  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.55  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 56.7% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |
| c - Critical Lane Group           |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 5849: L Street & 30th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      |      | ↑↑   | ↑    | ↑    | ↑↑↑  |      |      |      |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  | 4.0  | 4.0  | 4.0  |      |      |      |      |
| Lane Util. Factor      |      |      |      |      | 0.95 | 1.00 | 0.86 | 0.86 |      |      |      |      |
| Frt                    |      |      |      |      | 1.00 | 0.85 | 1.00 | 1.00 |      |      |      |      |
| Flt Protected          |      |      |      |      | 1.00 | 1.00 | 0.95 | 1.00 |      |      |      |      |
| Satd. Flow (prot)      |      |      |      |      | 3539 | 1425 | 1522 | 4646 |      |      |      |      |
| Flt Permitted          |      |      |      |      | 1.00 | 1.00 | 0.95 | 1.00 |      |      |      |      |
| Satd. Flow (perm)      |      |      |      |      | 3539 | 1425 | 1522 | 4646 |      |      |      |      |
| Volume (vph)           | 0    | 0    | 0    | 0    | 439  | 80   | 288  | 1160 | 0    | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 0    | 439  | 80   | 288  | 1160 | 0    | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 0    | 36   | 113  | 0    | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 439  | 44   | 175  | 1160 | 0    | 0    | 0    | 0    |
| Parking (#/hr)         |      |      |      |      |      | 0    |      | 0    |      |      |      |      |
| Turn Type              |      |      |      |      |      | Perm | Perm |      |      |      |      |      |
| Protected Phases       |      |      |      |      | 8    |      |      | 2    |      |      |      |      |
| Permitted Phases       |      |      |      |      |      | 8    |      | 2    |      |      |      |      |
| Actuated Green, G (s)  |      |      |      |      | 31.0 | 31.0 | 43.0 | 43.0 |      |      |      |      |
| Effective Green, g (s) |      |      |      |      | 30.0 | 30.0 | 42.0 | 42.0 |      |      |      |      |
| Actuated g/C Ratio     |      |      |      |      | 0.38 | 0.38 | 0.52 | 0.52 |      |      |      |      |
| Clearance Time (s)     |      |      |      |      | 3.0  | 3.0  | 3.0  | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)     |      |      |      |      | 1327 | 534  | 799  | 2439 |      |      |      |      |
| v/s Ratio Prot         |      |      |      |      | 0.12 |      |      | 0.25 |      |      |      |      |
| v/s Ratio Perm         |      |      |      |      |      | 0.03 | 0.12 |      |      |      |      |      |
| v/c Ratio              |      |      |      |      | 0.33 | 0.08 | 0.22 | 0.48 |      |      |      |      |
| Uniform Delay, d1      |      |      |      |      | 17.8 | 16.1 | 10.2 | 12.0 |      |      |      |      |
| Progression Factor     |      |      |      |      | 0.66 | 0.37 | 0.09 | 0.42 |      |      |      |      |
| Incremental Delay, d2  |      |      |      |      | 0.6  | 0.3  | 0.5  | 0.5  |      |      |      |      |
| Delay (s)              |      |      |      |      | 12.4 | 6.3  | 1.4  | 5.6  |      |      |      |      |
| Level of Service       |      |      |      |      | B    | A    | A    | A    |      |      |      |      |
| Approach Delay (s)     |      | 0.0  |      |      | 11.4 |      |      | 4.8  |      |      | 0.0  |      |
| Approach LOS           |      | A    |      |      | B    |      |      | A    |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 6.5   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.42  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 65.2% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
5880: N Street & 30th Street

6/1/2005



| Movement               | EBL  | EBT  | WBT   | WBR  | NBL  | NBT  | NBR   | NEL2 | NEL   | NER  |
|------------------------|------|------|-------|------|------|------|-------|------|-------|------|
| Lane Configurations    | ↵    | ↑    | ↗     |      |      | ↔↕↔  |       |      | ↗↘    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0  | 4.0  | 4.0   |      |      | 4.0  |       |      | 4.0   |      |
| Lane Util. Factor      | 1.00 | 1.00 | 1.00  |      |      | 0.91 |       |      | 0.97  |      |
| Fr't                   | 1.00 | 1.00 | 0.99  |      |      | 0.99 |       |      | 0.99  |      |
| Flt Protected          | 0.95 | 1.00 | 1.00  |      |      | 0.99 |       |      | 0.96  |      |
| Satd. Flow (prot)      | 1770 | 1863 | 1655  |      |      | 4793 |       |      | 3408  |      |
| Flt Permitted          | 0.35 | 1.00 | 1.00  |      |      | 0.99 |       |      | 0.96  |      |
| Satd. Flow (perm)      | 645  | 1863 | 1655  |      |      | 4793 |       |      | 3408  |      |
| Volume (vph)           | 74   | 74   | 235   | 24   | 198  | 490  | 60    | 685  | 523   | 128  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 74   | 74   | 235   | 24   | 198  | 490  | 60    | 685  | 523   | 128  |
| RTOR Reduction (vph)   | 0    | 0    | 5     | 0    | 0    | 13   | 0     | 0    | 0     | 0    |
| Lane Group Flow (vph)  | 74   | 74   | 254   | 0    | 0    | 735  | 0     | 0    | 1336  | 0    |
| Parking (#/hr)         |      |      | 0     | 0    |      | 0    | 0     |      |       |      |
| Turn Type              | Perm |      |       | Perm |      |      | Split |      |       |      |
| Protected Phases       |      | 4    | 8     |      |      | 2    |       | 6    | 6     |      |
| Permitted Phases       | 4    |      |       |      | 2    |      |       |      |       |      |
| Actuated Green, G (s)  | 17.0 | 17.0 | 17.0  |      |      | 18.0 |       |      | 36.0  |      |
| Effective Green, g (s) | 16.0 | 16.0 | 16.0  |      |      | 17.0 |       |      | 35.0  |      |
| Actuated g/C Ratio     | 0.20 | 0.20 | 0.20  |      |      | 0.21 |       |      | 0.44  |      |
| Clearance Time (s)     | 3.0  | 3.0  | 3.0   |      |      | 3.0  |       |      | 3.0   |      |
| Lane Grp Cap (vph)     | 129  | 373  | 331   |      |      | 1019 |       |      | 1491  |      |
| v/s Ratio Prot         |      | 0.04 | c0.15 |      |      |      |       |      | c0.39 |      |
| v/s Ratio Perm         | 0.11 |      |       |      |      | 0.15 |       |      |       |      |
| v/c Ratio              | 0.57 | 0.20 | 0.77  |      |      | 0.72 |       |      | 0.90  |      |
| Uniform Delay, d1      | 28.9 | 26.7 | 30.2  |      |      | 29.3 |       |      | 20.8  |      |
| Progression Factor     | 1.03 | 1.01 | 0.64  |      |      | 0.65 |       |      | 1.00  |      |
| Incremental Delay, d2  | 11.3 | 0.8  | 13.9  |      |      | 4.3  |       |      | 8.8   |      |
| Delay (s)              | 41.2 | 27.7 | 33.3  |      |      | 23.5 |       |      | 29.6  |      |
| Level of Service       | D    | C    | C     |      |      | C    |       |      | C     |      |
| Approach Delay (s)     |      | 34.5 | 33.3  |      |      | 23.5 |       |      | 29.6  |      |
| Approach LOS           |      | C    | C     |      |      | C    |       |      | C     |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 28.4  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.82  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 84.6% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 5882: P Street & 30th Street

6/1/2005



| Movement                          | EBL  | EBT  | WBT  | NBL2 | NBL  | NBT  | NBR  |
|-----------------------------------|------|------|------|------|------|------|------|
| Lane Configurations               |      |      |      |      |      |      |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               | 4.0  | 4.0  | 4.0  | 4.0  | 4.0  | 4.0  |      |
| Lane Util. Factor                 | 1.00 | 1.00 | 0.95 | 1.00 | 0.91 | 0.91 |      |
| Fr <sub>t</sub>                   | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.98 |      |
| Fl <sub>t</sub> Protected         | 0.95 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 |      |
| Satd. Flow (prot)                 | 1770 | 1863 | 3539 | 1593 | 1449 | 3152 |      |
| Fl <sub>t</sub> Permitted         | 0.38 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 |      |
| Satd. Flow (perm)                 | 716  | 1863 | 3539 | 1593 | 1449 | 3152 |      |
| Volume (vph)                      | 113  | 832  | 626  | 338  | 93   | 396  | 66   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 113  | 832  | 626  | 338  | 93   | 396  | 66   |
| RTOR Reduction (vph)              | 0    | 0    | 0    | 0    | 0    | 16   | 0    |
| Lane Group Flow (vph)             | 113  | 832  | 626  | 338  | 93   | 446  | 0    |
| Parking (#/hr)                    |      |      |      | 0    | 0    | 0    |      |
| Turn Type                         | Perm |      |      | Perm | Perm |      |      |
| Protected Phases                  |      | 4    | 8    |      |      | 2    |      |
| Permitted Phases                  | 4    |      |      | 2    | 2    |      |      |
| Actuated Green, G (s)             | 48.0 | 48.0 | 48.0 | 26.0 | 26.0 | 26.0 |      |
| Effective Green, g (s)            | 47.0 | 47.0 | 47.0 | 25.0 | 25.0 | 25.0 |      |
| Actuated g/C Ratio                | 0.59 | 0.59 | 0.59 | 0.31 | 0.31 | 0.31 |      |
| Clearance Time (s)                | 3.0  | 3.0  | 3.0  | 3.0  | 3.0  | 3.0  |      |
| Lane Grp Cap (vph)                | 421  | 1095 | 2079 | 498  | 453  | 985  |      |
| v/s Ratio Prot                    |      | 0.45 | 0.18 |      |      | 0.14 |      |
| v/s Ratio Perm                    | 0.16 |      |      | 0.21 | 0.06 |      |      |
| v/c Ratio                         | 0.27 | 0.76 | 0.30 | 0.68 | 0.21 | 0.45 |      |
| Uniform Delay, d <sub>1</sub>     | 8.1  | 12.3 | 8.3  | 24.0 | 20.2 | 22.0 |      |
| Progression Factor                | 0.56 | 0.59 | 0.60 | 1.00 | 1.00 | 1.00 |      |
| Incremental Delay, d <sub>2</sub> | 1.3  | 4.1  | 0.2  | 7.3  | 1.0  | 1.5  |      |
| Delay (s)                         | 5.8  | 11.3 | 5.2  | 31.3 | 21.2 | 23.5 |      |
| Level of Service                  | A    | B    | A    | C    | C    | C    |      |
| Approach Delay (s)                |      | 10.7 | 5.2  |      |      | 26.2 |      |
| Approach LOS                      |      | B    | A    |      |      | C    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 14.9  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.73  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 69.2% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
 5886: Capitol & 30th Street

6/1/2005



| Movement                          | EBL   | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|-------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations               | ↶     | ↷    |      |      | ↷     |      |      | ↶↷   |      |      |      |      |
| Ideal Flow (vphpl)                | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               | 4.0   | 4.0  |      |      | 4.0   |      |      | 4.0  |      |      |      |      |
| Lane Util. Factor                 | 1.00  | 0.95 |      |      | 0.95  |      |      | 0.91 |      |      |      |      |
| Fr <sub>t</sub>                   | 1.00  | 1.00 |      |      | 0.95  |      |      | 0.98 |      |      |      |      |
| Flt Protected                     | 0.95  | 1.00 |      |      | 1.00  |      |      | 0.99 |      |      |      |      |
| Satd. Flow (prot)                 | 1770  | 3539 |      |      | 3368  |      |      | 4951 |      |      |      |      |
| Flt Permitted                     | 0.95  | 1.00 |      |      | 1.00  |      |      | 0.99 |      |      |      |      |
| Satd. Flow (perm)                 | 1770  | 3539 |      |      | 3368  |      |      | 4951 |      |      |      |      |
| Volume (vph)                      | 127   | 238  | 0    | 0    | 479   | 228  | 141  | 943  | 177  | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 127   | 238  | 0    | 0    | 479   | 228  | 141  | 943  | 177  | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0     | 0    | 0    | 0    | 72    | 0    | 0    | 28   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 127   | 238  | 0    | 0    | 636   | 0    | 0    | 1233 | 0    | 0    | 0    | 0    |
| Turn Type                         | Prot  |      |      |      |       |      | Perm |      |      |      |      |      |
| Protected Phases                  | 7     | 4    |      |      | 8     |      |      | 2    |      |      |      |      |
| Permitted Phases                  |       |      |      |      |       |      | 2    |      |      |      |      |      |
| Actuated Green, G (s)             | 15.0  | 44.0 |      |      | 26.0  |      |      | 30.0 |      |      |      |      |
| Effective Green, g (s)            | 14.0  | 43.0 |      |      | 25.0  |      |      | 29.0 |      |      |      |      |
| Actuated g/C Ratio                | 0.18  | 0.54 |      |      | 0.31  |      |      | 0.36 |      |      |      |      |
| Clearance Time (s)                | 3.0   | 3.0  |      |      | 3.0   |      |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)                | 310   | 1902 |      |      | 1053  |      |      | 1795 |      |      |      |      |
| v/s Ratio Prot                    | c0.07 | 0.07 |      |      | c0.19 |      |      |      |      |      |      |      |
| v/s Ratio Perm                    |       |      |      |      |       |      |      | 0.25 |      |      |      |      |
| v/c Ratio                         | 0.41  | 0.13 |      |      | 0.60  |      |      | 0.69 |      |      |      |      |
| Uniform Delay, d <sub>1</sub>     | 29.3  | 9.2  |      |      | 23.3  |      |      | 21.6 |      |      |      |      |
| Progression Factor                | 1.04  | 0.89 |      |      | 0.17  |      |      | 0.80 |      |      |      |      |
| Incremental Delay, d <sub>2</sub> | 3.7   | 0.1  |      |      | 1.4   |      |      | 1.5  |      |      |      |      |
| Delay (s)                         | 34.3  | 8.3  |      |      | 5.3   |      |      | 18.8 |      |      |      |      |
| Level of Service                  | C     | A    |      |      | A     |      |      | B    |      |      |      |      |
| Approach Delay (s)                |       | 17.3 |      |      | 5.3   |      |      | 18.8 |      |      | 0.0  |      |
| Approach LOS                      |       | B    |      |      | A     |      |      | B    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 14.5  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.60  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 62.6% | ICU Level of Service | B    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 5888: Capitol & 29th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL   | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|-------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑↑   |      | ↖     | ↑↑   |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      | 4.0   | 4.0  |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 0.95 |      | 1.00  | 0.95 |      |      |      |      |      | 0.91 |      |
| Frt                    |      | 0.94 |      | 1.00  | 1.00 |      |      |      |      |      | 0.98 |      |
| Flt Protected          |      | 1.00 |      | 0.95  | 1.00 |      |      |      |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 3157 |      | 1770  | 3539 |      |      |      |      |      | 4773 |      |
| Flt Permitted          |      | 1.00 |      | 0.51  | 1.00 |      |      |      |      |      | 1.00 |      |
| Satd. Flow (perm)      |      | 3157 |      | 952   | 3539 |      |      |      |      |      | 4773 |      |
| Volume (vph)           | 0    | 214  | 147  | 162   | 482  | 0    | 0    | 0    | 0    | 147  | 1174 | 257  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 214  | 147  | 162   | 482  | 0    | 0    | 0    | 0    | 147  | 1174 | 257  |
| RTOR Reduction (vph)   | 0    | 25   | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 36   | 0    |
| Lane Group Flow (vph)  | 0    | 336  | 0    | 162   | 482  | 0    | 0    | 0    | 0    | 0    | 1542 | 0    |
| Parking (#/hr)         |      | 0    | 0    |       |      |      |      |      |      |      | 0    | 0    |
| Turn Type              |      |      |      | Perm  |      |      |      |      |      | Perm |      |      |
| Protected Phases       |      | 4    |      |       | 8    |      |      |      |      |      | 6    |      |
| Permitted Phases       |      |      |      | 8     |      |      |      |      |      | 6    |      |      |
| Actuated Green, G (s)  |      | 34.0 |      | 34.0  | 34.0 |      |      |      |      |      | 40.0 |      |
| Effective Green, g (s) |      | 33.0 |      | 33.0  | 33.0 |      |      |      |      |      | 39.0 |      |
| Actuated g/C Ratio     |      | 0.41 |      | 0.41  | 0.41 |      |      |      |      |      | 0.49 |      |
| Clearance Time (s)     |      | 3.0  |      | 3.0   | 3.0  |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 1302 |      | 393   | 1460 |      |      |      |      |      | 2327 |      |
| v/s Ratio Prot         |      | 0.11 |      |       | 0.14 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      |      | c0.17 |      |      |      |      |      |      | 0.32 |      |
| v/c Ratio              |      | 0.26 |      | 0.41  | 0.33 |      |      |      |      |      | 0.66 |      |
| Uniform Delay, d1      |      | 15.4 |      | 16.6  | 16.0 |      |      |      |      |      | 15.5 |      |
| Progression Factor     |      | 0.67 |      | 0.58  | 0.59 |      |      |      |      |      | 0.52 |      |
| Incremental Delay, d2  |      | 0.4  |      | 2.5   | 0.5  |      |      |      |      |      | 1.3  |      |
| Delay (s)              |      | 10.7 |      | 12.2  | 9.9  |      |      |      |      |      | 9.3  |      |
| Level of Service       |      | B    |      | B     | A    |      |      |      |      |      | A    |      |
| Approach Delay (s)     |      | 10.7 |      |       | 10.5 |      | 0.0  |      |      |      | 9.3  |      |
| Approach LOS           |      | B    |      |       | B    |      | A    |      |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 9.8   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.55  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 62.6% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 5890: Capitol & 26th Street

6/1/2005



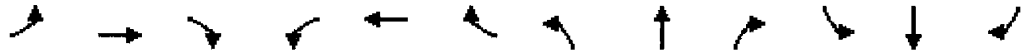
| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|-------|------|------|------|------|
| Lane Configurations    | ↖    | ↗    |      | ↖    | ↗     |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0  | 4.0  |      | 4.0  | 4.0   |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor      | 1.00 | 1.00 |      | 1.00 | 1.00  |      |      | 1.00  |      |      | 1.00 |      |
| Frt                    | 1.00 | 1.00 |      | 1.00 | 0.99  |      |      | 0.97  |      |      | 0.98 |      |
| Flt Protected          | 0.95 | 1.00 |      | 0.95 | 1.00  |      |      | 0.99  |      |      | 0.99 |      |
| Satd. Flow (prot)      | 1770 | 1670 |      | 1770 | 1667  |      |      | 1608  |      |      | 1627 |      |
| Flt Permitted          | 0.34 | 1.00 |      | 0.50 | 1.00  |      |      | 0.97  |      |      | 0.96 |      |
| Satd. Flow (perm)      | 629  | 1670 |      | 930  | 1667  |      |      | 1574  |      |      | 1578 |      |
| Volume (vph)           | 9    | 366  | 9    | 5    | 568   | 23   | 10   | 36    | 15   | 9    | 24   | 5    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 9    | 366  | 9    | 5    | 568   | 23   | 10   | 36    | 15   | 9    | 24   | 5    |
| RTOR Reduction (vph)   | 0    | 2    | 0    | 0    | 3     | 0    | 0    | 11    | 0    | 0    | 4    | 0    |
| Lane Group Flow (vph)  | 9    | 373  | 0    | 5    | 589   | 0    | 0    | 50    | 0    | 0    | 34   | 0    |
| Parking (#/hr)         |      | 0    | 0    |      | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      |      | Perm |       |      | Perm |       |      | Perm |      |      |
| Protected Phases       |      | 4    |      |      | 8     |      |      | 2     |      |      | 6    |      |
| Permitted Phases       | 4    |      |      | 8    |       |      | 2    |       |      | 6    |      |      |
| Actuated Green, G (s)  | 36.0 | 36.0 |      | 36.0 | 36.0  |      |      | 18.0  |      |      | 18.0 |      |
| Effective Green, g (s) | 35.0 | 35.0 |      | 35.0 | 35.0  |      |      | 17.0  |      |      | 17.0 |      |
| Actuated g/C Ratio     | 0.58 | 0.58 |      | 0.58 | 0.58  |      |      | 0.28  |      |      | 0.28 |      |
| Clearance Time (s)     | 3.0  | 3.0  |      | 3.0  | 3.0   |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)     | 367  | 974  |      | 543  | 972   |      |      | 446   |      |      | 447  |      |
| v/s Ratio Prot         |      | 0.22 |      |      | c0.35 |      |      |       |      |      |      |      |
| v/s Ratio Perm         | 0.01 |      |      | 0.01 |       |      |      | c0.03 |      |      | 0.02 |      |
| v/c Ratio              | 0.02 | 0.38 |      | 0.01 | 0.61  |      |      | 0.11  |      |      | 0.08 |      |
| Uniform Delay, d1      | 5.3  | 6.7  |      | 5.2  | 8.1   |      |      | 15.9  |      |      | 15.8 |      |
| Progression Factor     | 1.00 | 1.00 |      | 1.00 | 1.00  |      |      | 1.00  |      |      | 0.68 |      |
| Incremental Delay, d2  | 0.1  | 1.1  |      | 0.0  | 2.8   |      |      | 0.5   |      |      | 0.3  |      |
| Delay (s)              | 5.4  | 7.9  |      | 5.3  | 10.8  |      |      | 16.4  |      |      | 11.0 |      |
| Level of Service       | A    | A    |      | A    | B     |      |      | B     |      |      | B    |      |
| Approach Delay (s)     |      | 7.8  |      |      | 10.8  |      |      | 16.4  |      |      | 11.0 |      |
| Approach LOS           |      | A    |      |      | B     |      |      | B     |      |      | B    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.1  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.44  |                      |     |
| Actuated Cycle Length (s)         | 60.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 42.0% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6481: J Street & 28th Street

6/1/2005



| Movement                          | EBL  | EBT   | EBR  | WBL  | WBT  | WBR    | NBL  | NBT                   | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|-------|------|------|------|--------|------|-----------------------|------|------|------|------|
| Lane Configurations               |      | ↑↑↑   |      |      |      | ↑      |      | ↑                     |      |      | ↑    |      |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900 | 1900 | 1900   | 1900 | 1900                  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0   |      |      |      |        |      | 4.0                   |      |      | 4.0  |      |
| Lane Util. Factor                 |      | 0.91  |      |      |      |        |      | 1.00                  |      |      | 1.00 |      |
| Fr't                              |      | 1.00  |      |      |      |        |      | 0.93                  |      |      | 1.00 |      |
| Flt Protected                     |      | 1.00  |      |      |      |        |      | 1.00                  |      |      | 0.99 |      |
| Satd. Flow (prot)                 |      | 4888  |      |      |      |        |      | 1559                  |      |      | 1656 |      |
| Flt Permitted                     |      | 1.00  |      |      |      |        |      | 1.00                  |      |      | 0.94 |      |
| Satd. Flow (perm)                 |      | 4888  |      |      |      |        |      | 1559                  |      |      | 1570 |      |
| Volume (vph)                      | 30   | 1111  | 35   | 0    | 0    | 0      | 0    | 87                    | 94   | 14   | 42   | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00   | 1.00 | 1.00                  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 30   | 1111  | 35   | 0    | 0    | 0      | 0    | 87                    | 94   | 14   | 42   | 0    |
| RTOR Reduction (vph)              | 0    | 4     | 0    | 0    | 0    | 0      | 0    | 37                    | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 0    | 1172  | 0    | 0    | 0    | 0      | 0    | 144                   | 0    | 0    | 56   | 0    |
| Parking (#/hr)                    | 0    | 0     | 0    |      |      |        |      | 0                     | 0    | 0    | 0    |      |
| Turn Type                         | Perm |       |      |      |      | custom |      |                       |      | Perm |      |      |
| Protected Phases                  |      | 4     |      |      |      |        |      | 2                     |      |      | 6    |      |
| Permitted Phases                  | 4    |       |      |      |      | 8      |      |                       |      | 6    |      |      |
| Actuated Green, G (s)             |      | 42.0  |      |      |      |        |      | 32.0                  |      |      | 32.0 |      |
| Effective Green, g (s)            |      | 41.0  |      |      |      |        |      | 31.0                  |      |      | 31.0 |      |
| Actuated g/C Ratio                |      | 0.51  |      |      |      |        |      | 0.39                  |      |      | 0.39 |      |
| Clearance Time (s)                |      | 3.0   |      |      |      |        |      | 3.0                   |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |      | 2505  |      |      |      |        |      | 604                   |      |      | 608  |      |
| v/s Ratio Prot                    |      |       |      |      |      |        |      | 0.09                  |      |      |      |      |
| v/s Ratio Perm                    |      | 0.24  |      |      |      |        |      |                       |      |      | 0.04 |      |
| v/c Ratio                         |      | 0.47  |      |      |      |        |      | 0.24                  |      |      | 0.09 |      |
| Uniform Delay, d1                 |      | 12.5  |      |      |      |        |      | 16.5                  |      |      | 15.6 |      |
| Progression Factor                |      | 1.00  |      |      |      |        |      | 0.48                  |      |      | 1.00 |      |
| Incremental Delay, d2             |      | 0.6   |      |      |      |        |      | 0.9                   |      |      | 0.3  |      |
| Delay (s)                         |      | 13.1  |      |      |      |        |      | 8.8                   |      |      | 15.9 |      |
| Level of Service                  |      | B     |      |      |      |        |      | A                     |      |      | B    |      |
| Approach Delay (s)                |      | 13.1  |      |      | 0.0  |        |      | 8.8                   |      |      | 15.9 |      |
| Approach LOS                      |      | B     |      |      | A    |        |      | A                     |      |      | B    |      |
| <b>Intersection Summary</b>       |      |       |      |      |      |        |      |                       |      |      |      |      |
| HCM Average Control Delay         |      | 12.7  |      |      |      |        |      | HCM Level of Service  |      |      | B    |      |
| HCM Volume to Capacity ratio      |      | 0.37  |      |      |      |        |      | Sum of lost time (s)  |      | 8.0  |      |      |
| Actuated Cycle Length (s)         |      | 80.0  |      |      |      |        |      | ICU Level of Service  |      | A    |      |      |
| Intersection Capacity Utilization |      | 44.0% |      |      |      |        |      | Analysis Period (min) |      | 15   |      |      |
| c Critical Lane Group             |      |       |      |      |      |        |      |                       |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
 6482: K Street & 28th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↖    | ↗    |      | ↖    | ↗    |      | ↖    | ↗    |      | ↖    | ↗    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  |      | 4.0  | 4.0  |      | 4.0  | 4.0  |      | 4.0  | 4.0  |
| Lane Util. Factor      |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |
| Frt                    |      | 1.00 | 0.85 |      | 1.00 | 0.85 |      | 1.00 | 0.85 |      | 1.00 | 0.85 |
| Flt Protected          |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 0.99 | 1.00 |      | 0.99 | 1.00 |
| Satd. Flow (prot)      |      | 1671 | 1425 |      | 1672 | 1425 |      | 1655 | 1425 |      | 1658 | 1425 |
| Flt Permitted          |      | 0.96 | 1.00 |      | 0.98 | 1.00 |      | 0.91 | 1.00 |      | 0.92 | 1.00 |
| Satd. Flow (perm)      |      | 1606 | 1425 |      | 1638 | 1425 |      | 1518 | 1425 |      | 1546 | 1425 |
| Volume (vph)           | 12   | 168  | 16   | 42   | 692  | 100  | 44   | 124  | 150  | 24   | 84   | 8    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 12   | 168  | 16   | 42   | 692  | 100  | 44   | 124  | 150  | 24   | 84   | 8    |
| RTOR Reduction (vph)   | 0    | 0    | 5    | 0    | 0    | 21   | 0    | 0    | 114  | 0    | 0    | 6    |
| Lane Group Flow (vph)  | 0    | 180  | 11   | 0    | 734  | 79   | 0    | 168  | 36   | 0    | 108  | 2    |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      | Perm | Perm |      | Perm | Perm |      | Perm | Perm |      | Perm |
| Protected Phases       |      | 4    |      |      | 8    |      |      | 2    |      |      | 6    |      |
| Permitted Phases       | 4    |      | 4    | 8    |      | 8    | 2    |      | 2    | 6    |      | 6    |
| Actuated Green, G (s)  |      | 54.0 | 54.0 |      | 54.0 | 54.0 |      | 20.0 | 20.0 |      | 20.0 | 20.0 |
| Effective Green, g (s) |      | 53.0 | 53.0 |      | 53.0 | 53.0 |      | 19.0 | 19.0 |      | 19.0 | 19.0 |
| Actuated g/C Ratio     |      | 0.66 | 0.66 |      | 0.66 | 0.66 |      | 0.24 | 0.24 |      | 0.24 | 0.24 |
| Clearance Time (s)     |      | 3.0  | 3.0  |      | 3.0  | 3.0  |      | 3.0  | 3.0  |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |      | 1064 | 944  |      | 1085 | 944  |      | 361  | 338  |      | 367  | 338  |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      | 0.11 | 0.01 |      | 0.45 | 0.06 |      | 0.11 | 0.02 |      | 0.07 | 0.00 |
| v/c Ratio              |      | 0.17 | 0.01 |      | 0.68 | 0.08 |      | 0.47 | 0.11 |      | 0.29 | 0.01 |
| Uniform Delay, d1      |      | 5.1  | 4.6  |      | 8.3  | 4.8  |      | 26.1 | 23.9 |      | 25.0 | 23.3 |
| Progression Factor     |      | 1.00 | 1.00 |      | 0.65 | 0.04 |      | 0.85 | 0.66 |      | 0.91 | 0.85 |
| Incremental Delay, d2  |      | 0.3  | 0.0  |      | 2.8  | 0.1  |      | 4.0  | 0.6  |      | 2.0  | 0.0  |
| Delay (s)              |      | 5.5  | 4.6  |      | 8.1  | 0.3  |      | 26.2 | 16.3 |      | 24.9 | 19.9 |
| Level of Service       |      | A    | A    |      | A    | A    |      | C    | B    |      | C    | B    |
| Approach Delay (s)     |      | 5.4  |      |      | 7.2  |      |      | 21.6 |      |      | 24.5 |      |
| Approach LOS           |      | A    |      |      | A    |      |      | C    |      |      | C    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.4  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.62  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 76.3% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
6483: L Street & 28th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      |      | 4.0  |      |      | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00 |      |      | 1.00 |      |      | 1.00 |      |      | 1.00 |      |
| Fr't                   |      | 0.98 |      |      | 0.97 |      |      | 0.99 |      |      | 0.97 |      |
| Flt Protected          |      | 0.99 |      |      | 0.99 |      |      | 0.99 |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 1632 |      |      | 1612 |      |      | 1646 |      |      | 1616 |      |
| Flt Permitted          |      | 0.91 |      |      | 0.80 |      |      | 0.91 |      |      | 0.98 |      |
| Satd. Flow (perm)      |      | 1502 |      |      | 1314 |      |      | 1518 |      |      | 1588 |      |
| Volume (vph)           | 53   | 326  | 69   | 116  | 248  | 86   | 44   | 135  | 9    | 11   | 99   | 35   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 53   | 326  | 69   | 116  | 248  | 86   | 44   | 135  | 9    | 11   | 99   | 35   |
| RTOR Reduction (vph)   | 0    | 8    | 0    | 0    | 11   | 0    | 0    | 2    | 0    | 0    | 14   | 0    |
| Lane Group Flow (vph)  | 0    | 440  | 0    | 0    | 439  | 0    | 0    | 186  | 0    | 0    | 131  | 0    |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      |      | Perm |      |      | Perm |      |      | Perm |      |      |
| Protected Phases       |      | 2    |      |      | 6    |      |      | 3    |      |      | 7    |      |
| Permitted Phases       | 2    |      |      | 6    |      |      | 3    | 3    |      | 7    |      |      |
| Actuated Green, G (s)  |      | 48.0 |      |      | 48.0 |      |      | 26.0 |      |      | 26.0 |      |
| Effective Green, g (s) |      | 47.0 |      |      | 47.0 |      |      | 25.0 |      |      | 25.0 |      |
| Actuated g/C Ratio     |      | 0.59 |      |      | 0.59 |      |      | 0.31 |      |      | 0.31 |      |
| Clearance Time (s)     |      | 3.0  |      |      | 3.0  |      |      | 3.0  |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 882  |      |      | 772  |      |      | 474  |      |      | 496  |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      | 0.29 |      |      | 0.33 |      |      | 0.12 |      |      | 0.08 |      |
| v/c Ratio              |      | 0.50 |      |      | 0.57 |      |      | 0.39 |      |      | 0.26 |      |
| Uniform Delay, d1      |      | 9.6  |      |      | 10.2 |      |      | 21.5 |      |      | 20.6 |      |
| Progression Factor     |      | 1.00 |      |      | 0.32 |      |      | 0.72 |      |      | 0.47 |      |
| Incremental Delay, d2  |      | 2.0  |      |      | 2.4  |      |      | 1.9  |      |      | 1.2  |      |
| Delay (s)              |      | 11.6 |      |      | 5.7  |      |      | 17.4 |      |      | 11.0 |      |
| Level of Service       |      | B    |      |      | A    |      |      | B    |      |      | B    |      |
| Approach Delay (s)     |      | 11.6 |      |      | 5.7  |      |      | 17.4 |      |      | 11.0 |      |
| Approach LOS           |      | B    |      |      | A    |      |      | B    |      |      | B    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.3  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.51  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 73.5% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6484: Capitol & 28th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      |      | 4.0  |      |      | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00 |      |      | 0.95 |      |      | 1.00 |      |      | 1.00 |      |
| Frt                    |      | 0.99 |      |      | 0.99 |      |      | 0.95 |      |      | 0.99 |      |
| Flt Protected          |      | 1.00 |      |      | 0.99 |      |      | 0.99 |      |      | 0.99 |      |
| Satd. Flow (prot)      |      | 1655 |      |      | 3303 |      |      | 1571 |      |      | 1648 |      |
| Flt Permitted          |      | 0.95 |      |      | 0.82 |      |      | 0.84 |      |      | 0.92 |      |
| Satd. Flow (perm)      |      | 1572 |      |      | 2734 |      |      | 1334 |      |      | 1528 |      |
| Volume (vph)           | 23   | 327  | 27   | 90   | 532  | 50   | 120  | 144  | 151  | 36   | 217  | 22   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 23   | 327  | 27   | 90   | 532  | 50   | 120  | 144  | 151  | 36   | 217  | 22   |
| RTOR Reduction (vph)   | 0    | 4    | 0    | 0    | 8    | 0    | 0    | 26   | 0    | 0    | 4    | 0    |
| Lane Group Flow (vph)  | 0    | 373  | 0    | 0    | 664  | 0    | 0    | 389  | 0    | 0    | 271  | 0    |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      |      | Perm |      |      | Perm |      |      | Perm |      |      |
| Protected Phases       |      | 4    |      |      | 8    |      |      | 2    |      |      | 6    |      |
| Permitted Phases       | 4    |      |      | 8    |      |      | 2    |      |      | 6    |      |      |
| Actuated Green, G (s)  |      | 34.0 |      |      | 34.0 |      |      | 40.0 |      |      | 40.0 |      |
| Effective Green, g (s) |      | 33.0 |      |      | 33.0 |      |      | 39.0 |      |      | 39.0 |      |
| Actuated g/C Ratio     |      | 0.41 |      |      | 0.41 |      |      | 0.49 |      |      | 0.49 |      |
| Clearance Time (s)     |      | 3.0  |      |      | 3.0  |      |      | 3.0  |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 648  |      |      | 1128 |      |      | 650  |      |      | 745  |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      | 0.24 |      |      | 0.24 |      |      | 0.29 |      |      | 0.18 |      |
| v/c Ratio              |      | 0.58 |      |      | 0.59 |      |      | 0.60 |      |      | 0.36 |      |
| Uniform Delay, d1      |      | 18.1 |      |      | 18.2 |      |      | 14.8 |      |      | 12.8 |      |
| Progression Factor     |      | 1.00 |      |      | 0.53 |      |      | 1.12 |      |      | 0.95 |      |
| Incremental Delay, d2  |      | 3.7  |      |      | 2.1  |      |      | 2.4  |      |      | 1.2  |      |
| Delay (s)              |      | 21.8 |      |      | 11.8 |      |      | 19.1 |      |      | 13.4 |      |
| Level of Service       |      | C    |      |      | B    |      |      | B    |      |      | B    |      |
| Approach Delay (s)     |      | 21.8 |      |      | 11.8 |      |      | 19.1 |      |      | 13.4 |      |
| Approach LOS           |      | C    |      |      | B    |      |      | B    |      |      | B    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 16.0  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.59  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 90.3% | ICU Level of Service | E   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 6485: N Street & 28th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      |      | 4.0  |      |      | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00 |      |      | 1.00 |      |      | 1.00 |      |      | 1.00 |      |
| Frt                    |      | 1.00 |      |      | 0.96 |      |      | 0.98 |      |      | 0.98 |      |
| Flt Protected          |      | 0.99 |      |      | 1.00 |      |      | 0.99 |      |      | 0.97 |      |
| Satd. Flow (prot)      |      | 1653 |      |      | 1612 |      |      | 1616 |      |      | 1601 |      |
| Flt Permitted          |      | 0.81 |      |      | 0.98 |      |      | 0.86 |      |      | 0.56 |      |
| Satd. Flow (perm)      |      | 1348 |      |      | 1587 |      |      | 1407 |      |      | 927  |      |
| Volume (vph)           | 38   | 150  | 6    | 38   | 613  | 241  | 89   | 163  | 48   | 119  | 50   | 22   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 38   | 150  | 6    | 38   | 613  | 241  | 89   | 163  | 48   | 119  | 50   | 22   |
| RTOR Reduction (vph)   | 0    | 1    | 0    | 0    | 17   | 0    | 0    | 9    | 0    | 0    | 6    | 0    |
| Lane Group Flow (vph)  | 0    | 193  | 0    | 0    | 875  | 0    | 0    | 291  | 0    | 0    | 185  | 0    |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      | Perm |      |      | Perm |      |      | Perm |      |      |      |
| Protected Phases       |      | 2    |      |      | 6    |      |      | 8    |      |      | 4    |      |
| Permitted Phases       | 2    |      |      | 6    |      |      | 8    | 8    |      | 4    | 4    |      |
| Actuated Green, G (s)  |      | 52.0 |      |      | 52.0 |      |      | 22.0 |      |      | 22.0 |      |
| Effective Green, g (s) |      | 51.0 |      |      | 51.0 |      |      | 21.0 |      |      | 21.0 |      |
| Actuated g/C Ratio     |      | 0.64 |      |      | 0.64 |      |      | 0.26 |      |      | 0.26 |      |
| Clearance Time (s)     |      | 3.0  |      |      | 3.0  |      |      | 3.0  |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 859  |      |      | 1012 |      |      | 369  |      |      | 243  |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      | 0.14 |      |      | 0.55 |      |      | 0.21 |      |      | 0.20 |      |
| v/c Ratio              |      | 0.22 |      |      | 0.86 |      |      | 0.79 |      |      | 0.76 |      |
| Uniform Delay, d1      |      | 6.1  |      |      | 11.7 |      |      | 27.4 |      |      | 27.2 |      |
| Progression Factor     |      | 1.00 |      |      | 1.13 |      |      | 1.00 |      |      | 1.17 |      |
| Incremental Delay, d2  |      | 0.6  |      |      | 1.0  |      |      | 15.7 |      |      | 18.4 |      |
| Delay (s)              |      | 6.7  |      |      | 14.2 |      |      | 43.1 |      |      | 50.2 |      |
| Level of Service       |      | A    |      |      | B    |      |      | D    |      |      | D    |      |
| Approach Delay (s)     |      | 6.7  |      |      | 14.2 |      |      | 43.1 |      |      | 50.2 |      |
| Approach LOS           |      | A    |      |      | B    |      |      | D    |      |      | D    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 23.1  | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 0.84  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 79.0% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
6511: K Street & Alhambra

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↕    | ↗    |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  |      | 4.0  |      |      | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00 | 1.00 |      | 1.00 |      |      | 0.95 |      |      | 0.95 |      |
| Frt                    |      | 1.00 | 0.85 |      | 0.99 |      |      | 0.99 |      |      | 0.96 |      |
| Flt Protected          |      | 0.99 | 1.00 |      | 0.99 |      |      | 0.99 |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 1838 | 1583 |      | 1822 |      |      | 3455 |      |      | 3382 |      |
| Flt Permitted          |      | 0.95 | 1.00 |      | 0.94 |      |      | 0.58 |      |      | 0.95 |      |
| Satd. Flow (perm)      |      | 1761 | 1583 |      | 1732 |      |      | 2029 |      |      | 3227 |      |
| Volume (vph)           | 13   | 35   | 114  | 25   | 61   | 6    | 132  | 329  | 36   | 3    | 701  | 296  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 13   | 35   | 114  | 25   | 61   | 6    | 132  | 329  | 36   | 3    | 701  | 296  |
| RTOR Reduction (vph)   | 0    | 0    | 74   | 0    | 3    | 0    | 0    | 7    | 0    | 0    | 58   | 0    |
| Lane Group Flow (vph)  | 0    | 48   | 40   | 0    | 89   | 0    | 0    | 490  | 0    | 0    | 942  | 0    |
| Turn Type              | Perm |      | Perm | Perm |      |      | Perm |      |      | Perm |      |      |
| Protected Phases       |      | 4    |      |      | 8    |      |      | 2    |      |      |      | 6    |
| Permitted Phases       | 4    |      | 4    | 8    |      |      | 2    |      |      | 6    |      |      |
| Actuated Green, G (s)  |      | 29.0 | 29.0 |      | 29.0 |      |      | 45.0 |      |      | 45.0 |      |
| Effective Green, g (s) |      | 28.0 | 28.0 |      | 28.0 |      |      | 44.0 |      |      | 44.0 |      |
| Actuated g/C Ratio     |      | 0.35 | 0.35 |      | 0.35 |      |      | 0.55 |      |      | 0.55 |      |
| Clearance Time (s)     |      | 3.0  | 3.0  |      | 3.0  |      |      | 3.0  |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 616  | 554  |      | 606  |      |      | 1116 |      |      | 1775 |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      | 0.03 | 0.03 |      | 0.05 |      |      | 0.24 |      |      | 0.29 |      |
| v/c Ratio              |      | 0.08 | 0.07 |      | 0.15 |      |      | 0.44 |      |      | 0.53 |      |
| Uniform Delay, d1      |      | 17.4 | 17.3 |      | 17.8 |      |      | 10.7 |      |      | 11.4 |      |
| Progression Factor     |      | 0.52 | 0.05 |      | 1.00 |      |      | 0.60 |      |      | 0.42 |      |
| Incremental Delay, d2  |      | 0.2  | 0.3  |      | 0.5  |      |      | 1.0  |      |      | 0.5  |      |
| Delay (s)              |      | 9.3  | 1.2  |      | 18.3 |      |      | 7.4  |      |      | 5.4  |      |
| Level of Service       |      | A    | A    |      | B    |      |      | A    |      |      | A    |      |
| Approach Delay (s)     |      | 3.6  |      |      | 18.3 |      |      | 7.4  |      |      | 5.4  |      |
| Approach LOS           |      | A    |      |      | B    |      |      | A    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 6.4   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.38  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 64.6% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 9622: K Street & 30th Street

6/1/2005



| Movement                          | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations               | ↖    | ↑    |      |      | ↑    | ↗    |      | ↖↗   |      |      |      |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               | 4.0  | 4.0  |      |      | 4.0  | 4.0  |      | 4.0  |      |      |      |      |
| Lane Util. Factor                 | 1.00 | 1.00 |      |      | 1.00 | 1.00 |      | 0.91 |      |      |      |      |
| Fr <sub>t</sub>                   | 1.00 | 1.00 |      |      | 1.00 | 0.85 |      | 1.00 |      |      |      |      |
| Fl <sub>t</sub> Protected         | 0.95 | 1.00 |      |      | 1.00 | 1.00 |      | 0.99 |      |      |      |      |
| Satd. Flow (prot)                 | 1770 | 1863 |      |      | 1863 | 1583 |      | 5015 |      |      |      |      |
| Fl <sub>t</sub> Permitted         | 0.39 | 1.00 |      |      | 1.00 | 1.00 |      | 0.99 |      |      |      |      |
| Satd. Flow (perm)                 | 729  | 1863 |      |      | 1863 | 1583 |      | 5015 |      |      |      |      |
| Volume (vph)                      | 91   | 95   | 0    | 0    | 427  | 15   | 310  | 850  | 6    | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 91   | 95   | 0    | 0    | 427  | 15   | 310  | 850  | 6    | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0    | 0    | 0    | 0    | 0    | 5    | 0    | 1    | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 91   | 95   | 0    | 0    | 427  | 10   | 0    | 1165 | 0    | 0    | 0    | 0    |
| Turn Type                         | Perm |      |      |      |      |      | Perm | Perm |      |      |      |      |
| Protected Phases                  |      | 4    |      |      | 8    |      |      | 2    |      |      |      |      |
| Permitted Phases                  | 4    |      |      |      |      | 8    | 2    |      |      |      |      |      |
| Actuated Green, G (s)             | 39.0 | 39.0 |      |      | 39.0 | 39.0 |      | 35.0 |      |      |      |      |
| Effective Green, g (s)            | 38.0 | 38.0 |      |      | 38.0 | 38.0 |      | 34.0 |      |      |      |      |
| Actuated g/C Ratio                | 0.48 | 0.48 |      |      | 0.48 | 0.48 |      | 0.42 |      |      |      |      |
| Clearance Time (s)                | 3.0  | 3.0  |      |      | 3.0  | 3.0  |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)                | 346  | 885  |      |      | 885  | 752  |      | 2131 |      |      |      |      |
| v/s Ratio Prot                    |      | 0.05 |      |      | 0.23 |      |      |      |      |      |      |      |
| v/s Ratio Perm                    | 0.12 |      |      |      |      | 0.01 |      | 0.23 |      |      |      |      |
| v/c Ratio                         | 0.26 | 0.11 |      |      | 0.48 | 0.01 |      | 0.55 |      |      |      |      |
| Uniform Delay, d <sub>1</sub>     | 12.6 | 11.6 |      |      | 14.3 | 11.1 |      | 17.2 |      |      |      |      |
| Progression Factor                | 0.93 | 0.91 |      |      | 1.28 | 1.25 |      | 0.30 |      |      |      |      |
| Incremental Delay, d <sub>2</sub> | 1.8  | 0.2  |      |      | 1.7  | 0.0  |      | 0.9  |      |      |      |      |
| Delay (s)                         | 13.4 | 10.8 |      |      | 20.0 | 13.8 |      | 6.0  |      |      |      |      |
| Level of Service                  | B    | B    |      |      | B    | B    |      | A    |      |      |      |      |
| Approach Delay (s)                |      | 12.1 |      |      | 19.8 |      |      | 6.0  |      |      | 0.0  |      |
| Approach LOS                      |      | B    |      |      | B    |      |      | A    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.0  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.51  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 64.2% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

CUMULATIVE PLUS SUTTER PROGRAM PLUS TRINITY PROJECT  
WITH CENTRAL CITY TWO WAY CONVERSION

PM Peak Hour

Signalized Intersections

(pm12)



HCM Signalized Intersection Capacity Analysis  
 2004: L Street & 21th Street

6/1/2005



| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations       |      | ↖    |      |      | ↗    |      |      | ↕    |      |      |      |      |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)       |      | 4.0  |      |      | 4.0  |      |      | 4.0  |      |      |      |      |
| Lane Util. Factor         |      | 1.00 |      |      | 1.00 |      |      | 0.95 |      |      |      |      |
| Fr <sub>t</sub>           |      | 1.00 |      |      | 0.98 |      |      | 0.99 |      |      |      |      |
| Fl <sub>t</sub> Protected |      | 0.99 |      |      | 1.00 |      |      | 1.00 |      |      |      |      |
| Satd. Flow (prot)         |      | 1655 |      |      | 1650 |      |      | 3337 |      |      |      |      |
| Fl <sub>t</sub> Permitted |      | 0.66 |      |      | 1.00 |      |      | 1.00 |      |      |      |      |
| Satd. Flow (perm)         |      | 1107 |      |      | 1650 |      |      | 3337 |      |      |      |      |
| Volume (vph)              | 133  | 372  | 0    | 0    | 385  | 52   | 63   | 1399 | 55   | 0    | 0    | 0    |
| Peak-hour factor, PHF     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)           | 133  | 372  | 0    | 0    | 385  | 52   | 63   | 1399 | 55   | 0    | 0    | 0    |
| RTOR Reduction (vph)      | 0    | 0    | 0    | 0    | 7    | 0    | 0    | 5    | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)     | 0    | 505  | 0    | 0    | 430  | 0    | 0    | 1512 | 0    | 0    | 0    | 0    |
| Parking (#/hr)            | 0    | 0    |      |      | 0    | 0    | 0    | 0    | 0    |      |      |      |
| Turn Type                 | Perm |      |      |      |      |      | Perm |      |      |      |      |      |
| Protected Phases          |      | 2    |      |      | 6    |      |      | 8    |      |      |      |      |
| Permitted Phases          | 2    |      |      |      |      |      | 8    | 8    |      |      |      |      |
| Actuated Green, G (s)     |      | 27.0 |      |      | 27.0 |      |      | 27.0 |      |      |      |      |
| Effective Green, g (s)    |      | 26.0 |      |      | 26.0 |      |      | 26.0 |      |      |      |      |
| Actuated g/C Ratio        |      | 0.43 |      |      | 0.43 |      |      | 0.43 |      |      |      |      |
| Clearance Time (s)        |      | 3.0  |      |      | 3.0  |      |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)        |      | 480  |      |      | 715  |      |      | 1446 |      |      |      |      |
| v/s Ratio Prot            |      |      |      |      | 0.26 |      |      |      |      |      |      |      |
| v/s Ratio Perm            |      | 0.46 |      |      |      |      |      | 0.45 |      |      |      |      |
| v/c Ratio                 |      | 1.05 |      |      | 0.60 |      |      | 1.05 |      |      |      |      |
| Uniform Delay, d1         |      | 17.0 |      |      | 13.0 |      |      | 17.0 |      |      |      |      |
| Progression Factor        |      | 0.86 |      |      | 1.21 |      |      | 1.00 |      |      |      |      |
| Incremental Delay, d2     |      | 51.9 |      |      | 3.7  |      |      | 36.7 |      |      |      |      |
| Delay (s)                 |      | 66.5 |      |      | 19.5 |      |      | 53.7 |      |      |      |      |
| Level of Service          |      | E    |      |      | B    |      |      | D    |      |      |      |      |
| Approach Delay (s)        |      | 66.5 |      |      | 19.5 |      |      | 53.7 |      |      | 0.0  |      |
| Approach LOS              |      | E    |      |      | B    |      |      | D    |      |      | A    |      |

| Intersection Summary              |        |                      |     |
|-----------------------------------|--------|----------------------|-----|
| HCM Average Control Delay         | 50.2   | HCM Level of Service | D   |
| HCM Volume to Capacity ratio      | 1.05   |                      |     |
| Actuated Cycle Length (s)         | 60.0   | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 102.6% | ICU Level of Service | G   |
| Analysis Period (min)             | 15     |                      |     |
| c Critical Lane Group             |        |                      |     |

HCM Signalized Intersection Capacity Analysis  
 2012: J Street & 21th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations    |      | ↑↑↑  |      |      |      |      |      | ↑↑    |      |      |      |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      |      |      |      |      | 4.0   |      |      |      |      |
| Lane Util. Factor      |      | 0.91 |      |      |      |      |      | 0.95  |      |      |      |      |
| Frt                    |      | 1.00 |      |      |      |      |      | 0.97  |      |      |      |      |
| Flt Protected          |      | 1.00 |      |      |      |      |      | 1.00  |      |      |      |      |
| Satd. Flow (prot)      |      | 4906 |      |      |      |      |      | 3277  |      |      |      |      |
| Flt Permitted          |      | 1.00 |      |      |      |      |      | 1.00  |      |      |      |      |
| Satd. Flow (perm)      |      | 4906 |      |      |      |      |      | 3277  |      |      |      |      |
| Volume (vph)           | 79   | 1993 | 0    | 0    | 0    | 0    | 0    | 1247  | 253  | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 79   | 1993 | 0    | 0    | 0    | 0    | 0    | 1247  | 253  | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0    | 7    | 0    | 0    | 0    | 0    | 0    | 1     | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 2065 | 0    | 0    | 0    | 0    | 0    | 1499  | 0    | 0    | 0    | 0    |
| Parking (#/hr)         | 0    | 0    |      |      |      |      |      | 0     | 0    |      |      |      |
| Turn Type              | Perm |      |      |      |      |      |      |       |      |      |      |      |
| Protected Phases       |      | 4    |      |      |      |      |      | 2     |      |      |      |      |
| Permitted Phases       | 4    |      |      |      |      |      |      |       |      |      |      |      |
| Actuated Green, G (s)  |      | 26.0 |      |      |      |      |      | 28.0  |      |      |      |      |
| Effective Green, g (s) |      | 25.0 |      |      |      |      |      | 27.0  |      |      |      |      |
| Actuated g/C Ratio     |      | 0.42 |      |      |      |      |      | 0.45  |      |      |      |      |
| Clearance Time (s)     |      | 3.0  |      |      |      |      |      | 3.0   |      |      |      |      |
| Lane Grp Cap (vph)     |      | 2044 |      |      |      |      |      | 1475  |      |      |      |      |
| v/s Ratio Prot         |      |      |      |      |      |      |      | c0.46 |      |      |      |      |
| v/s Ratio Perm         |      | 0.42 |      |      |      |      |      |       |      |      |      |      |
| v/c Ratio              |      | 1.01 |      |      |      |      |      | 1.02  |      |      |      |      |
| Uniform Delay, d1      |      | 17.5 |      |      |      |      |      | 16.5  |      |      |      |      |
| Progression Factor     |      | 0.63 |      |      |      |      |      | 0.27  |      |      |      |      |
| Incremental Delay, d2  |      | 18.2 |      |      |      |      |      | 11.7  |      |      |      |      |
| Delay (s)              |      | 29.2 |      |      |      |      |      | 16.2  |      |      |      |      |
| Level of Service       |      | C    |      |      |      |      |      | B     |      |      |      |      |
| Approach Delay (s)     |      | 29.2 |      |      | 0.0  |      |      | 16.2  |      |      | 0.0  |      |
| Approach LOS           |      | C    |      |      | A    |      |      | B     |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 23.7  | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 1.01  |                      |     |
| Actuated Cycle Length (s)         | 60.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 89.3% | ICU Level of Service | E   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 2074: J Street & 19th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑↑↑  |      |      |      |      |      |      |      |      | ↑↑   |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      |      |      |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 0.91 |      |      |      |      |      |      |      |      | 0.95 |      |
| Frt                    |      | 0.97 |      |      |      |      |      |      |      |      | 1.00 |      |
| Flt Protected          |      | 1.00 |      |      |      |      |      |      |      |      | 0.98 |      |
| Satd. Flow (prot)      |      | 4769 |      |      |      |      |      |      |      |      | 3305 |      |
| Flt Permitted          |      | 1.00 |      |      |      |      |      |      |      |      | 0.98 |      |
| Satd. Flow (perm)      |      | 4769 |      |      |      |      |      |      |      |      | 3305 |      |
| Volume (vph)           | 0    | 1829 | 456  | 0    | 0    | 0    | 0    | 0    | 0    | 208  | 395  | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 1829 | 456  | 0    | 0    | 0    | 0    | 0    | 0    | 208  | 395  | 0    |
| RTOR Reduction (vph)   | 0    | 72   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 11   | 0    |
| Lane Group Flow (vph)  | 0    | 2213 | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 592  | 0    |
| Parking (#/hr)         |      | 0    | 0    |      |      |      |      |      |      | 0    | 0    |      |
| Turn Type              |      |      |      |      |      |      |      |      |      |      | Perm |      |
| Protected Phases       |      | 4    |      |      |      |      |      |      |      |      |      | 6    |
| Permitted Phases       |      |      |      |      |      |      |      |      |      | 6    |      |      |
| Actuated Green, G (s)  |      | 36.0 |      |      |      |      |      |      |      |      | 18.0 |      |
| Effective Green, g (s) |      | 35.0 |      |      |      |      |      |      |      |      | 17.0 |      |
| Actuated g/C Ratio     |      | 0.58 |      |      |      |      |      |      |      |      | 0.28 |      |
| Clearance Time (s)     |      | 3.0  |      |      |      |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 2782 |      |      |      |      |      |      |      |      | 936  |      |
| v/s Ratio Prot         |      | 0.46 |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      |      |      |      |      |      |      |      |      | 0.18 |      |
| v/c Ratio              |      | 0.80 |      |      |      |      |      |      |      |      | 0.63 |      |
| Uniform Delay, d1      |      | 9.7  |      |      |      |      |      |      |      |      | 18.8 |      |
| Progression Factor     |      | 1.00 |      |      |      |      |      |      |      |      | 1.00 |      |
| Incremental Delay, d2  |      | 2.5  |      |      |      |      |      |      |      |      | 3.2  |      |
| Delay (s)              |      | 12.2 |      |      |      |      |      |      |      |      | 22.0 |      |
| Level of Service       |      | B    |      |      |      |      |      |      |      |      | C    |      |
| Approach Delay (s)     |      | 12.2 |      |      | 0.0  |      |      | 0.0  |      |      | 22.0 |      |
| Approach LOS           |      | B    |      |      | A    |      |      | A    |      |      | C    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 14.2  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.74  |                      |     |
| Actuated Cycle Length (s)         | 60.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 69.1% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 2088: L Street & 29th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR    | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|------|--------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations    |      |      | ↗      | ↖    | ↑    |      |      |      |      |      | ↑↑↑   |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900   | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      |      | 4.0    | 4.0  | 4.0  |      |      |      |      |      | 4.0   |      |
| Lane Util. Factor      |      |      | 1.00   | 1.00 | 1.00 |      |      |      |      |      | 0.91  |      |
| Frt                    |      |      | 0.86   | 1.00 | 1.00 |      |      |      |      |      | 0.99  |      |
| Flt Protected          |      |      | 1.00   | 0.95 | 1.00 |      |      |      |      |      | 1.00  |      |
| Satd. Flow (prot)      |      |      | 1450   | 1770 | 1863 |      |      |      |      |      | 4868  |      |
| Flt Permitted          |      |      | 1.00   | 0.95 | 1.00 |      |      |      |      |      | 1.00  |      |
| Satd. Flow (perm)      |      |      | 1450   | 1770 | 1863 |      |      |      |      |      | 4868  |      |
| Volume (vph)           | 0    | 0    | 461    | 253  | 459  | 0    | 0    | 0    | 0    | 0    | 1449  | 101  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00   | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 461    | 253  | 459  | 0    | 0    | 0    | 0    | 0    | 1449  | 101  |
| RTOR Reduction (vph)   | 0    | 0    | 5      | 5    | 0    | 0    | 0    | 0    | 0    | 0    | 10    | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 456    | 248  | 459  | 0    | 0    | 0    | 0    | 0    | 1540  | 0    |
| Parking (#/hr)         |      |      | 0      |      |      |      |      |      |      |      | 0     | 0    |
| Turn Type              |      |      | custom | Perm |      |      |      |      |      |      |       |      |
| Protected Phases       |      |      |        |      | 8    |      |      |      |      |      | 6     |      |
| Permitted Phases       |      |      | 4      | 8    |      |      |      |      |      |      |       |      |
| Actuated Green, G (s)  |      |      | 40.0   | 40.0 | 40.0 |      |      |      |      |      | 34.0  |      |
| Effective Green, g (s) |      |      | 39.0   | 39.0 | 39.0 |      |      |      |      |      | 33.0  |      |
| Actuated g/C Ratio     |      |      | 0.49   | 0.49 | 0.49 |      |      |      |      |      | 0.41  |      |
| Clearance Time (s)     |      |      | 3.0    | 3.0  | 3.0  |      |      |      |      |      | 3.0   |      |
| Lane Grp Cap (vph)     |      |      | 707    | 863  | 908  |      |      |      |      |      | 2008  |      |
| v/s Ratio Prot         |      |      |        |      | 0.25 |      |      |      |      |      | c0.32 |      |
| v/s Ratio Perm         |      |      | c0.31  | 0.14 |      |      |      |      |      |      |       |      |
| v/c Ratio              |      |      | 0.65   | 0.29 | 0.51 |      |      |      |      |      | 0.77  |      |
| Uniform Delay, d1      |      |      | 15.3   | 12.2 | 13.9 |      |      |      |      |      | 20.2  |      |
| Progression Factor     |      |      | 0.70   | 0.35 | 0.37 |      |      |      |      |      | 0.68  |      |
| Incremental Delay, d2  |      |      | 3.1    | 0.8  | 2.0  |      |      |      |      |      | 1.9   |      |
| Delay (s)              |      |      | 13.9   | 5.1  | 7.2  |      |      |      |      |      | 15.6  |      |
| Level of Service       |      |      | B      | A    | A    |      |      |      |      |      | B     |      |
| Approach Delay (s)     |      | 13.9 |        |      | 6.5  |      |      | 0.0  |      |      | 15.6  |      |
| Approach LOS           |      | B    |        |      | A    |      |      | A    |      |      | B     |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 12.9  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.70  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 82.8% | ICU Level of Service | E   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
 2239: L Street & Alhambra

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      |      |      |      | ↕    |      |      | ↕    |      |      | ↕    | ↗    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0  |      |      | 4.0  |      |      | 4.0  | 4.0  |
| Lane Util. Factor      |      |      |      |      | 1.00 |      |      | 1.00 |      |      | 1.00 | 1.00 |
| Frt                    |      |      |      |      | 0.97 |      |      | 0.97 |      |      | 1.00 | 0.85 |
| Flt Protected          |      |      |      |      | 0.99 |      |      | 0.99 |      |      | 1.00 | 1.00 |
| Satd. Flow (prot)      |      |      |      |      | 1613 |      |      | 1620 |      |      | 1858 | 1425 |
| Flt Permitted          |      |      |      |      | 0.99 |      |      | 0.72 |      |      | 0.95 | 1.00 |
| Satd. Flow (perm)      |      |      |      |      | 1613 |      |      | 1168 |      |      | 1763 | 1425 |
| Volume (vph)           | 0    | 0    | 0    | 74   | 162  | 56   | 88   | 522  | 160  | 42   | 848  | 224  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 74   | 162  | 56   | 88   | 522  | 160  | 42   | 848  | 224  |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 10   | 0    | 0    | 12   | 0    | 0    | 0    | 67   |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 282  | 0    | 0    | 758  | 0    | 0    | 890  | 157  |
| Parking (#/hr)         |      |      |      | 0    | 0    | 0    | 0    | 0    | 0    |      |      | 0    |
| Turn Type              |      |      |      | Perm |      |      | Perm |      |      | Perm |      | Perm |
| Protected Phases       |      |      |      |      | 8    |      |      | 2    |      |      | 6    |      |
| Permitted Phases       |      |      |      | 8    |      |      | 2    |      |      | 6    |      | 6    |
| Actuated Green, G (s)  |      |      |      |      | 17.0 |      |      | 57.0 |      |      | 57.0 | 57.0 |
| Effective Green, g (s) |      |      |      |      | 16.0 |      |      | 56.0 |      |      | 56.0 | 56.0 |
| Actuated g/C Ratio     |      |      |      |      | 0.20 |      |      | 0.70 |      |      | 0.70 | 0.70 |
| Clearance Time (s)     |      |      |      |      | 3.0  |      |      | 3.0  |      |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |      |      |      |      | 323  |      |      | 818  |      |      | 1234 | 998  |
| v/s Ratio Prot         |      |      |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      |      |      | 0.17 |      |      | 0.65 |      |      | 0.50 | 0.11 |
| v/c Ratio              |      |      |      |      | 0.87 |      |      | 0.93 |      |      | 0.72 | 0.16 |
| Uniform Delay, d1      |      |      |      |      | 31.0 |      |      | 10.3 |      |      | 7.3  | 4.0  |
| Progression Factor     |      |      |      |      | 1.00 |      |      | 0.97 |      |      | 0.58 | 0.95 |
| Incremental Delay, d2  |      |      |      |      | 26.1 |      |      | 11.4 |      |      | 3.1  | 0.3  |
| Delay (s)              |      |      |      |      | 57.1 |      |      | 21.4 |      |      | 7.3  | 4.1  |
| Level of Service       |      |      |      |      | E    |      |      | C    |      |      | A    | A    |
| Approach Delay (s)     |      | 0.0  |      |      | 57.1 |      |      | 21.4 |      |      | 6.7  |      |
| Approach LOS           |      | A    |      |      | E    |      |      | C    |      |      | A    |      |

Intersection Summary

|                                   |        |                      |     |
|-----------------------------------|--------|----------------------|-----|
| HCM Average Control Delay         | 18.6   | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.92   |                      |     |
| Actuated Cycle Length (s)         | 80.0   | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 115.1% | ICU Level of Service | H   |
| Analysis Period (min)             | 15     |                      |     |
| c Critical Lane Group             |        |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3426: L Street & 19th Street

6/1/2005



| Movement                          | EBL  | EBT   | EBR  | WBL  | WBT                  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|-------|------|------|----------------------|------|------|------|------|------|------|------|
| Lane Configurations               |      | ↔     |      |      | ↔                    |      |      |      |      |      | ↔↔   |      |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900 | 1900                 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0   |      |      | 4.0                  |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor                 |      | 1.00  |      |      | 1.00                 |      |      |      |      |      | 0.95 |      |
| Frt                               |      | 0.98  |      |      | 1.00                 |      |      |      |      |      | 1.00 |      |
| Flt Protected                     |      | 1.00  |      |      | 0.99                 |      |      |      |      |      | 0.99 |      |
| Satd. Flow (prot)                 |      | 1639  |      |      | 1656                 |      |      |      |      |      | 3313 |      |
| Flt Permitted                     |      | 1.00  |      |      | 0.86                 |      |      |      |      |      | 0.99 |      |
| Satd. Flow (perm)                 |      | 1639  |      |      | 1435                 |      |      |      |      |      | 3313 |      |
| Volume (vph)                      | 0    | 219   | 44   | 118  | 364                  | 0    | 0    | 0    | 0    | 269  | 780  | 16   |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00 | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 219   | 44   | 118  | 364                  | 0    | 0    | 0    | 0    | 269  | 780  | 16   |
| RTOR Reduction (vph)              | 0    | 12    | 0    | 0    | 0                    | 0    | 0    | 0    | 0    | 0    | 2    | 0    |
| Lane Group Flow (vph)             | 0    | 251   | 0    | 0    | 482                  | 0    | 0    | 0    | 0    | 0    | 1063 | 0    |
| Parking (#/hr)                    |      | 0     | 0    | 0    | 0                    |      |      |      |      | 0    | 0    | 0    |
| Turn Type                         |      |       |      | Perm |                      |      |      |      |      |      | Perm |      |
| Protected Phases                  |      | 2     |      |      | 6                    |      |      |      |      |      | 4    |      |
| Permitted Phases                  |      |       |      | 6    |                      | 6    |      |      |      | 4    |      | 4    |
| Actuated Green, G (s)             |      | 28.0  |      |      | 28.0                 |      |      |      |      |      | 26.0 |      |
| Effective Green, g (s)            |      | 27.0  |      |      | 27.0                 |      |      |      |      |      | 25.0 |      |
| Actuated g/C Ratio                |      | 0.45  |      |      | 0.45                 |      |      |      |      |      | 0.42 |      |
| Clearance Time (s)                |      | 3.0   |      |      | 3.0                  |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)                |      | 738   |      |      | 646                  |      |      |      |      |      | 1380 |      |
| v/s Ratio Prot                    |      | 0.15  |      |      |                      |      |      |      |      |      |      |      |
| v/s Ratio Perm                    |      |       |      |      | c0.34                |      |      |      |      |      | 0.32 |      |
| v/c Ratio                         |      | 0.34  |      |      | 0.75                 |      |      |      |      |      | 0.77 |      |
| Uniform Delay, d1                 |      | 10.7  |      |      | 13.7                 |      |      |      |      |      | 15.0 |      |
| Progression Factor                |      | 1.00  |      |      | 0.32                 |      |      |      |      |      | 0.77 |      |
| Incremental Delay, d2             |      | 1.3   |      |      | 6.1                  |      |      |      |      |      | 3.5  |      |
| Delay (s)                         |      | 12.0  |      |      | 10.4                 |      |      |      |      |      | 15.1 |      |
| Level of Service                  |      | B     |      |      | B                    |      |      |      |      |      | B    |      |
| Approach Delay (s)                |      | 12.0  |      |      | 10.4                 |      |      | 0.0  |      |      | 15.1 |      |
| Approach LOS                      |      | B     |      |      | B                    |      |      | A    |      |      | B    |      |
| <b>Intersection Summary</b>       |      |       |      |      |                      |      |      |      |      |      |      |      |
| HCM Average Control Delay         |      | 13.4  |      |      | HCM Level of Service |      |      | B    |      |      |      |      |
| HCM Volume to Capacity ratio      |      | 0.76  |      |      |                      |      |      |      |      |      |      |      |
| Actuated Cycle Length (s)         |      | 60.0  |      |      | Sum of lost time (s) |      |      | 8.0  |      |      |      |      |
| Intersection Capacity Utilization |      | 79.8% |      |      | ICU Level of Service |      |      | D    |      |      |      |      |
| Analysis Period (min)             |      | 15    |      |      |                      |      |      |      |      |      |      |      |
| c Critical Lane Group             |      |       |      |      |                      |      |      |      |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
 3427: L Street & 26th Street

6/1/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|-------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations    |      | ↕     |      |      | ↕    |      |      | ↕     |      |      | ↕    |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      | 4.0  |      |      | 4.0   |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00  |      |      | 1.00 |      |      | 1.00  |      |      | 1.00 |      |
| Frt                    |      | 1.00  |      |      | 0.99 |      |      | 1.00  |      |      | 0.97 |      |
| Flt Protected          |      | 1.00  |      |      | 1.00 |      |      | 0.98  |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 1674  |      |      | 1649 |      |      | 1650  |      |      | 1613 |      |
| Flt Permitted          |      | 1.00  |      |      | 0.97 |      |      | 0.92  |      |      | 0.99 |      |
| Satd. Flow (perm)      |      | 1672  |      |      | 1603 |      |      | 1545  |      |      | 1597 |      |
| Volume (vph)           | 4    | 450   | 4    | 14   | 164  | 19   | 25   | 53    | 0    | 7    | 58   | 22   |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 4    | 450   | 4    | 14   | 164  | 19   | 25   | 53    | 0    | 7    | 58   | 22   |
| RTOR Reduction (vph)   | 0    | 0     | 0    | 0    | 7    | 0    | 0    | 0     | 0    | 0    | 15   | 0    |
| Lane Group Flow (vph)  | 0    | 458   | 0    | 0    | 190  | 0    | 0    | 78    | 0    | 0    | 72   | 0    |
| Parking (#/hr)         | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |       |      | Perm |      |      | Perm |       |      | Perm |      |      |
| Protected Phases       |      | 4     |      |      | 8    |      |      | 2     |      |      | 6    |      |
| Permitted Phases       | 4    |       |      | 8    |      |      | 2    |       |      | 6    |      |      |
| Actuated Green, G (s)  |      | 33.0  |      |      | 33.0 |      |      | 21.0  |      |      | 21.0 |      |
| Effective Green, g (s) |      | 32.0  |      |      | 32.0 |      |      | 20.0  |      |      | 20.0 |      |
| Actuated g/C Ratio     |      | 0.53  |      |      | 0.53 |      |      | 0.33  |      |      | 0.33 |      |
| Clearance Time (s)     |      | 3.0   |      |      | 3.0  |      |      | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 892   |      |      | 855  |      |      | 515   |      |      | 532  |      |
| v/s Ratio Prot         |      |       |      |      |      |      |      |       |      |      |      |      |
| v/s Ratio Perm         |      | c0.27 |      |      | 0.12 |      |      | c0.05 |      |      | 0.05 |      |
| v/c Ratio              |      | 0.51  |      |      | 0.22 |      |      | 0.15  |      |      | 0.14 |      |
| Uniform Delay, d1      |      | 9.0   |      |      | 7.4  |      |      | 14.0  |      |      | 14.0 |      |
| Progression Factor     |      | 0.28  |      |      | 1.00 |      |      | 0.71  |      |      | 1.00 |      |
| Incremental Delay, d2  |      | 0.6   |      |      | 0.6  |      |      | 0.6   |      |      | 0.5  |      |
| Delay (s)              |      | 3.1   |      |      | 8.0  |      |      | 10.6  |      |      | 14.5 |      |
| Level of Service       |      | A     |      |      | A    |      |      | B     |      |      | B    |      |
| Approach Delay (s)     |      | 3.1   |      |      | 8.0  |      |      | 10.6  |      |      | 14.5 |      |
| Approach LOS           |      | A     |      |      | A    |      |      | B     |      |      | B    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 6.2   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.37  |                      |     |
| Actuated Cycle Length (s)         | 60.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 42.3% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3428: J Street & 29th St off ramp

6/1/2005



| Movement               | EBT  | EBR   | WBL   | WBT   | SBL   | SBT   | SWL2  | SWL   |
|------------------------|------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations    | ↑↑   | ↑     |       | ↑     |       | ↑↑↑   |       | ↑↑    |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  |
| Total Lost time (s)    | 4.0  | 4.0   |       | 4.0   |       | 4.0   |       | 4.0   |
| Lane Util. Factor      | 0.95 | 1.00  |       | 1.00  |       | 0.91  |       | 0.97  |
| Fr't                   | 1.00 | 0.85  |       | 1.00  |       | 1.00  |       | 1.00  |
| Flt Protected          | 1.00 | 1.00  |       | 0.95  |       | 0.99  |       | 0.95  |
| Satd. Flow (prot)      | 3539 | 1425  |       | 1770  |       | 4871  |       | 3433  |
| Flt Permitted          | 1.00 | 1.00  |       | 0.95  |       | 0.99  |       | 0.95  |
| Satd. Flow (perm)      | 3539 | 1425  |       | 1770  |       | 4871  |       | 3433  |
| Volume (vph)           | 1300 | 690   | 145   | 0     | 82    | 359   | 104   | 436   |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)        | 1300 | 690   | 145   | 0     | 82    | 359   | 104   | 436   |
| RTOR Reduction (vph)   | 0    | 29    | 0     | 0     | 0     | 0     | 0     | 0     |
| Lane Group Flow (vph)  | 1300 | 661   | 0     | 145   | 0     | 441   | 0     | 540   |
| Parking (#/hr)         |      | 0     |       |       |       | 0     |       |       |
| Turn Type              |      | Perm  | Split |       | Split |       | Split |       |
| Protected Phases       | 4    |       | 8     | 8     | 6     | 6     | 2     | 2     |
| Permitted Phases       |      | 4     |       |       |       |       |       |       |
| Actuated Green, G (s)  | 36.0 | 36.0  |       | 7.0   |       | 8.0   |       | 17.0  |
| Effective Green, g (s) | 35.0 | 35.0  |       | 6.0   |       | 7.0   |       | 16.0  |
| Actuated g/C Ratio     | 0.44 | 0.44  |       | 0.08  |       | 0.09  |       | 0.20  |
| Clearance Time (s)     | 3.0  | 3.0   |       | 3.0   |       | 3.0   |       | 3.0   |
| Lane Grp Cap (vph)     | 1548 | 623   |       | 133   |       | 426   |       | 687   |
| v/s Ratio Prot         | 0.37 |       |       | c0.08 |       | c0.09 |       | c0.16 |
| v/s Ratio Perm         |      | c0.46 |       |       |       |       |       |       |
| v/c Ratio              | 0.84 | 1.06  |       | 1.09  |       | 1.04  |       | 0.79  |
| Uniform Delay, d1      | 20.0 | 22.5  |       | 37.0  |       | 36.5  |       | 30.4  |
| Progression Factor     | 0.46 | 0.20  |       | 0.63  |       | 1.00  |       | 1.00  |
| Incremental Delay, d2  | 3.5  | 44.9  |       | 85.5  |       | 53.0  |       | 8.8   |
| Delay (s)              | 12.6 | 49.4  |       | 108.8 |       | 89.5  |       | 39.2  |
| Level of Service       | B    | D     |       | F     |       | F     |       | D     |
| Approach Delay (s)     | 25.4 |       |       | 108.8 |       | 89.5  |       | 39.2  |
| Approach LOS           | C    |       |       | F     |       | F     |       | D     |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 40.7  | HCM Level of Service | D    |
| HCM Volume to Capacity ratio      | 0.99  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 16.0 |
| Intersection Capacity Utilization | 81.3% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

# HCM Signalized Intersection Capacity Analysis

3429: J Street & Alhambra

6/1/2005

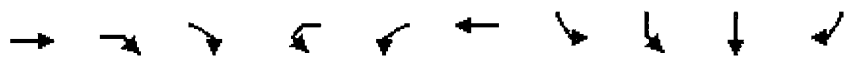


| Movement               | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR   |
|------------------------|-------|-------|------|-------|-------|------|------|------|------|------|------|-------|
| Lane Configurations    |       | ↔     |      | ↖     | ↖     | ↗    |      | ↕    |      |      | ↕    |       |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  |
| Total Lost time (s)    |       | 4.0   |      | 4.0   | 4.0   | 4.0  |      | 4.0  |      |      | 4.0  |       |
| Lane Util. Factor      |       | 0.95  |      | 0.95  | 0.95  | 1.00 |      | 0.95 |      |      | 0.95 |       |
| Fr't                   |       | 0.96  |      | 1.00  | 1.00  | 0.85 |      | 0.93 |      |      | 1.00 |       |
| Flt Protected          |       | 0.99  |      | 0.95  | 1.00  | 1.00 |      | 1.00 |      |      | 0.99 |       |
| Satd. Flow (prot)      |       | 3206  |      | 1681  | 1770  | 1425 |      | 3111 |      |      | 3342 |       |
| Flt Permitted          |       | 0.99  |      | 0.95  | 1.00  | 1.00 |      | 1.00 |      |      | 0.71 |       |
| Satd. Flow (perm)      |       | 3206  |      | 1681  | 1770  | 1425 |      | 3111 |      |      | 2388 |       |
| Volume (vph)           | 158   | 548   | 243  | 407   | 440   | 117  | 0    | 296  | 293  | 52   | 380  | 0     |
| Peak-hour factor, PHF  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  |
| Adj. Flow (vph)        | 158   | 548   | 243  | 407   | 440   | 117  | 0    | 296  | 293  | 52   | 380  | 0     |
| RTOR Reduction (vph)   | 0     | 43    | 0    | 0     | 0     | 82   | 0    | 223  | 0    | 0    | 0    | 0     |
| Lane Group Flow (vph)  | 0     | 906   | 0    | 407   | 440   | 35   | 0    | 366  | 0    | 0    | 432  | 0     |
| Parking (#/hr)         |       | 0     | 0    |       |       | 0    |      | 0    | 0    |      | 0    |       |
| Turn Type              | Split |       |      | Split |       | Perm | Perm |      |      | Perm |      |       |
| Protected Phases       | 4     | 4     |      | 8     | 8     |      |      | 2    |      |      |      | 6     |
| Permitted Phases       |       |       |      |       |       | 8    | 2    |      |      | 6    |      |       |
| Actuated Green, G (s)  |       | 27.0  |      | 25.0  | 25.0  | 25.0 |      | 19.0 |      |      |      | 19.0  |
| Effective Green, g (s) |       | 26.0  |      | 24.0  | 24.0  | 24.0 |      | 18.0 |      |      |      | 18.0  |
| Actuated g/C Ratio     |       | 0.32  |      | 0.30  | 0.30  | 0.30 |      | 0.22 |      |      |      | 0.22  |
| Clearance Time (s)     |       | 3.0   |      | 3.0   | 3.0   | 3.0  |      | 3.0  |      |      |      | 3.0   |
| Lane Grp Cap (vph)     |       | 1042  |      | 504   | 531   | 428  |      | 700  |      |      |      | 537   |
| v/s Ratio Prot         |       | c0.28 |      | 0.24  | c0.25 |      |      | 0.12 |      |      |      |       |
| v/s Ratio Perm         |       |       |      |       |       | 0.02 |      |      |      |      |      | c0.18 |
| v/c Ratio              |       | 0.87  |      | 0.81  | 0.83  | 0.08 |      | 0.52 |      |      |      | 0.80  |
| Uniform Delay, d1      |       | 25.4  |      | 25.9  | 26.1  | 20.1 |      | 27.2 |      |      |      | 29.3  |
| Progression Factor     |       | 0.51  |      | 1.00  | 1.00  | 1.00 |      | 0.96 |      |      |      | 1.00  |
| Incremental Delay, d2  |       | 9.0   |      | 13.0  | 13.9  | 0.4  |      | 2.5  |      |      |      | 12.1  |
| Delay (s)              |       | 21.9  |      | 38.9  | 40.0  | 20.5 |      | 28.5 |      |      |      | 41.5  |
| Level of Service       |       | C     |      | D     | D     | C    |      | C    |      |      |      | D     |
| Approach Delay (s)     |       | 21.9  |      |       | 37.1  |      |      | 28.5 |      |      |      | 41.5  |
| Approach LOS           |       | C     |      |       | D     |      |      | C    |      |      |      | D     |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 31.1  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.84  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 93.6% | ICU Level of Service | F    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3435: N Street & 29th Street

6/1/2005



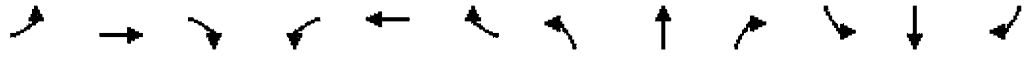
| Movement                          | EBT   | EBR  | EBR2 | WBL2  | WBL   | WBT   | SBL2 | SBL   | SBT  | SBR  |
|-----------------------------------|-------|------|------|-------|-------|-------|------|-------|------|------|
| Lane Configurations               | ↔     | ↔    |      |       | ↔     | ↔     | ↔    | ↔     | ↔    | ↔    |
| Ideal Flow (vphpl)                | 1900  | 1900 | 1900 | 1900  | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)               | 4.0   | 4.0  |      |       | 4.0   | 4.0   |      | 4.0   | 4.0  |      |
| Lane Util. Factor                 | 0.95  | 0.95 |      |       | 0.95  | 0.95  |      | 0.97  | 0.95 |      |
| Fr <sub>t</sub>                   | 1.00  | 0.85 |      |       | 1.00  | 1.00  |      | 1.00  | 0.99 |      |
| Fl <sub>t</sub> Protected         | 1.00  | 1.00 |      |       | 0.95  | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)                 | 1593  | 1354 |      |       | 1681  | 1770  |      | 3433  | 3343 |      |
| Fl <sub>t</sub> Permitted         | 1.00  | 1.00 |      |       | 0.95  | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)                 | 1593  | 1354 |      |       | 1681  | 1770  |      | 3433  | 3343 |      |
| Volume (vph)                      | 303   | 87   | 249  | 151   | 162   | 672   | 82   | 1200  | 931  | 37   |
| Peak-hour factor, PHF             | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 303   | 87   | 249  | 151   | 162   | 672   | 82   | 1200  | 931  | 37   |
| RTOR Reduction (vph)              | 0     | 129  | 0    | 0     | 0     | 0     | 0    | 0     | 3    | 0    |
| Lane Group Flow (vph)             | 303   | 207  | 0    | 0     | 313   | 672   | 0    | 1282  | 965  | 0    |
| Parking (#/hr)                    | 0     | 0    | 0    |       |       |       |      |       | 0    |      |
| Turn Type                         |       | Prot |      | Split | Split |       | Perm | Perm  |      |      |
| Protected Phases                  | 4     | 4    |      | 8     | 8     | 8     |      |       | 6    |      |
| Permitted Phases                  |       |      |      |       |       |       | 6    | 6     |      |      |
| Actuated Green, G (s)             | 17.0  | 17.0 |      |       | 27.0  | 27.0  |      | 27.0  | 27.0 |      |
| Effective Green, g (s)            | 16.0  | 16.0 |      |       | 26.0  | 26.0  |      | 26.0  | 26.0 |      |
| Actuated g/C Ratio                | 0.20  | 0.20 |      |       | 0.32  | 0.32  |      | 0.32  | 0.32 |      |
| Clearance Time (s)                | 3.0   | 3.0  |      |       | 3.0   | 3.0   |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)                | 319   | 271  |      |       | 546   | 575   |      | 1116  | 1086 |      |
| v/s Ratio Prot                    | c0.19 | 0.15 |      |       | 0.19  | c0.38 |      |       | 0.29 |      |
| v/s Ratio Perm                    |       |      |      |       |       |       |      | c0.37 |      |      |
| v/c Ratio                         | 0.95  | 0.76 |      |       | 0.57  | 1.17  |      | 1.15  | 0.89 |      |
| Uniform Delay, d <sub>1</sub>     | 31.6  | 30.2 |      |       | 22.4  | 27.0  |      | 27.0  | 25.6 |      |
| Progression Factor                | 0.88  | 0.80 |      |       | 1.14  | 1.12  |      | 0.60  | 0.57 |      |
| Incremental Delay, d <sub>2</sub> | 7.3   | 1.9  |      |       | 3.2   | 89.6  |      | 72.6  | 5.8  |      |
| Delay (s)                         | 35.1  | 26.1 |      |       | 28.7  | 119.8 |      | 88.8  | 20.5 |      |
| Level of Service                  | D     | C    |      |       | C     | F     |      | F     | C    |      |
| Approach Delay (s)                | 30.4  |      |      |       |       | 90.9  |      |       | 59.4 |      |
| Approach LOS                      | C     |      |      |       |       | F     |      |       | E    |      |

| Intersection Summary              |        |                      |      |
|-----------------------------------|--------|----------------------|------|
| HCM Average Control Delay         | 62.6   | HCM Level of Service | E    |
| HCM Volume to Capacity ratio      | 1.11   |                      |      |
| Actuated Cycle Length (s)         | 80.0   | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 100.5% | ICU Level of Service | G    |
| Analysis Period (min)             | 15     |                      |      |
| c Critical Lane Group             |        |                      |      |

# HCM Signalized Intersection Capacity Analysis

3436: Capitol & Alhambra

6/1/2005



| Movement               | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL  | NBT  | NBR  | SBL   | SBT  | SBR  |    |
|------------------------|-------|-------|------|-------|-------|------|------|------|------|-------|------|------|----|
| Lane Configurations    |       | ↕↕    |      |       | ↕↕    |      | ↖    | ↑    | ↗    | ↖     | ↑    | ↗    |    |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 |    |
| Total Lost time (s)    |       | 4.0   |      |       | 4.0   |      | 4.0  | 4.0  | 4.0  | 4.0   | 4.0  | 4.0  |    |
| Lane Util. Factor      |       | 0.95  |      |       | 0.95  |      | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |    |
| Frt                    |       | 1.00  |      |       | 0.98  |      | 1.00 | 1.00 | 0.85 | 1.00  | 1.00 | 0.85 |    |
| Flt Protected          |       | 0.99  |      |       | 1.00  |      | 0.95 | 1.00 | 1.00 | 0.95  | 1.00 | 1.00 |    |
| Satd. Flow (prot)      |       | 3314  |      |       | 3278  |      | 1770 | 1676 | 1425 | 1770  | 1676 | 1425 |    |
| Flt Permitted          |       | 0.99  |      |       | 1.00  |      | 0.30 | 1.00 | 1.00 | 0.30  | 1.00 | 1.00 |    |
| Satd. Flow (perm)      |       | 3314  |      |       | 3278  |      | 567  | 1676 | 1425 | 567   | 1676 | 1425 |    |
| Volume (vph)           | 142   | 408   | 7    | 49    | 672   | 126  | 55   | 526  | 81   | 259   | 526  | 57   |    |
| Peak-hour factor, PHF  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |    |
| Adj. Flow (vph)        | 142   | 408   | 7    | 49    | 672   | 126  | 55   | 526  | 81   | 259   | 526  | 57   |    |
| RTOR Reduction (vph)   | 0     | 1     | 0    | 0     | 18    | 0    | 0    | 0    | 35   | 0     | 0    | 24   |    |
| Lane Group Flow (vph)  | 0     | 556   |      | 0     | 0     | 829  | 0    | 55   | 526  | 46    | 259  | 526  | 33 |
| Parking (#/hr)         |       | 0     |      | 0     | 0     | 0    | 0    | 0    | 0    | 0     | 0    | 0    |    |
| Turn Type              | Split |       |      | Split |       |      | Perm |      | Perm | Perm  |      | Perm |    |
| Protected Phases       | 4     | 4     |      | 8     | 8     |      | 2    |      |      |       | 6    |      |    |
| Permitted Phases       |       |       |      |       |       |      | 2    |      | 2    | 6     |      | 6    |    |
| Actuated Green, G (s)  |       | 13.0  |      |       | 19.0  |      | 39.0 | 39.0 | 39.0 | 39.0  | 39.0 | 39.0 |    |
| Effective Green, g (s) |       | 12.0  |      |       | 18.0  |      | 38.0 | 38.0 | 38.0 | 38.0  | 38.0 | 38.0 |    |
| Actuated g/C Ratio     |       | 0.15  |      |       | 0.22  |      | 0.48 | 0.48 | 0.48 | 0.48  | 0.48 | 0.48 |    |
| Clearance Time (s)     |       | 3.0   |      |       | 3.0   |      | 3.0  | 3.0  | 3.0  | 3.0   | 3.0  | 3.0  |    |
| Lane Grp Cap (vph)     |       | 497   |      |       | 738   |      | 269  | 796  | 677  | 269   | 796  | 677  |    |
| v/s Ratio Prot         |       | c0.17 |      |       | c0.25 |      |      | 0.31 |      |       | 0.31 |      |    |
| v/s Ratio Perm         |       |       |      |       |       |      | 0.10 |      | 0.03 | c0.46 |      | 0.02 |    |
| v/c Ratio              |       | 1.12  |      |       | 1.12  |      | 0.20 | 0.66 | 0.07 | 0.96  | 0.66 | 0.05 |    |
| Uniform Delay, d1      |       | 34.0  |      |       | 31.0  |      | 12.2 | 16.1 | 11.4 | 20.3  | 16.1 | 11.3 |    |
| Progression Factor     |       | 1.11  |      |       | 1.00  |      | 0.53 | 0.43 | 0.37 | 0.60  | 0.54 | 0.27 |    |
| Incremental Delay, d2  |       | 76.8  |      |       | 72.6  |      | 1.2  | 3.1  | 0.1  | 36.2  | 2.9  | 0.1  |    |
| Delay (s)              |       | 114.5 |      |       | 103.6 |      | 7.7  | 9.9  | 4.3  | 48.4  | 11.6 | 3.2  |    |
| Level of Service       |       | F     |      |       | F     |      | A    | A    | A    | D     | B    | A    |    |
| Approach Delay (s)     |       | 114.5 |      |       | 103.6 |      |      | 9.0  |      |       | 22.3 |      |    |
| Approach LOS           |       | F     |      |       | F     |      |      | A    |      |       | C    |      |    |

## Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 60.6  | HCM Level of Service | E    |
| HCM Volume to Capacity ratio      | 1.03  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 95.0% | ICU Level of Service | F    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

# HCM Signalized Intersection Capacity Analysis

3437: P Street & P St off ramp

6/1/2005



| Movement               | EBT  | EBR  | WBL  | WBT  | SBL   | SBT  | SBR  | SWL2  | SWL  | SWR  |
|------------------------|------|------|------|------|-------|------|------|-------|------|------|
| Lane Configurations    | ↑    | ↑    | ↑    | ↑    |       | ↑↑↑  |      | ↑     | ↑↑   |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    | 4.0  | 4.0  | 4.0  | 4.0  |       | 4.0  |      | 4.0   | 4.0  |      |
| Lane Util. Factor      | 1.00 | 1.00 | 1.00 | 1.00 |       | 0.91 |      | 0.91  | 0.91 |      |
| Frt                    | 1.00 | 0.85 | 1.00 | 1.00 |       | 0.99 |      | 1.00  | 0.98 |      |
| Flt Protected          | 1.00 | 1.00 | 0.95 | 1.00 |       | 0.99 |      | 0.95  | 0.96 |      |
| Satd. Flow (prot)      | 1676 | 1425 | 1593 | 1676 |       | 4842 |      | 1610  | 3175 |      |
| Flt Permitted          | 1.00 | 1.00 | 0.38 | 1.00 |       | 0.99 |      | 0.95  | 0.96 |      |
| Satd. Flow (perm)      | 1676 | 1425 | 645  | 1676 |       | 4842 |      | 1610  | 3175 |      |
| Volume (vph)           | 383  | 193  | 210  | 509  | 260   | 978  | 43   | 259   | 238  | 60   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 383  | 193  | 210  | 509  | 260   | 978  | 43   | 259   | 238  | 60   |
| RTOR Reduction (vph)   | 0    | 32   | 0    | 0    | 0     | 4    | 0    | 0     | 0    | 0    |
| Lane Group Flow (vph)  | 383  | 161  | 210  | 509  | 0     | 1277 | 0    | 188   | 369  | 0    |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0     | 0    | 0    |       |      |      |
| Turn Type              |      | Perm | Perm |      | Split |      |      | Split |      |      |
| Protected Phases       | 4    |      |      | 8    | 6     | 6    |      | 2     | 2    |      |
| Permitted Phases       |      | 4    | 8    |      |       |      |      |       |      |      |
| Actuated Green, G (s)  | 33.0 | 33.0 | 33.0 | 33.0 |       | 25.0 |      | 13.0  | 13.0 |      |
| Effective Green, g (s) | 32.0 | 32.0 | 32.0 | 32.0 |       | 24.0 |      | 12.0  | 12.0 |      |
| Actuated g/C Ratio     | 0.40 | 0.40 | 0.40 | 0.40 |       | 0.30 |      | 0.15  | 0.15 |      |
| Clearance Time (s)     | 3.0  | 3.0  | 3.0  | 3.0  |       | 3.0  |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     | 670  | 570  | 258  | 670  |       | 1453 |      | 242   | 476  |      |
| v/s Ratio Prot         | 0.23 |      |      | 0.30 |       | 0.26 |      | 0.12  | 0.12 |      |
| v/s Ratio Perm         |      | 0.11 | 0.33 |      |       |      |      |       |      |      |
| v/c Ratio              | 0.57 | 0.28 | 0.81 | 0.76 |       | 0.88 |      | 0.78  | 0.78 |      |
| Uniform Delay, d1      | 18.7 | 16.2 | 21.4 | 20.7 |       | 26.6 |      | 32.7  | 32.7 |      |
| Progression Factor     | 1.00 | 1.00 | 0.97 | 0.96 |       | 0.48 |      | 1.00  | 1.00 |      |
| Incremental Delay, d2  | 3.5  | 1.2  | 22.9 | 7.6  |       | 4.3  |      | 21.4  | 11.7 |      |
| Delay (s)              | 22.2 | 17.5 | 43.7 | 27.5 |       | 17.0 |      | 54.1  | 44.4 |      |
| Level of Service       | C    | B    | D    | C    |       | B    |      | D     | D    |      |
| Approach Delay (s)     | 20.6 |      |      | 32.2 |       | 17.0 |      |       | 47.7 |      |
| Approach LOS           | C    |      |      | C    |       | B    |      |       | D    |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 26.6  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.83  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 81.0% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |



HCM Signalized Intersection Capacity Analysis  
 3438: P Street & Alhambra

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL   | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|------|------|------|-------|------|-------|------|------|------|-------|------|
| Lane Configurations    |      | ↔    |      |      | ↔     | ↗    | ↖     | ↗    | ↖    | ↖    | ↗     |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      | 4.0  |      |      | 4.0   | 4.0  | 4.0   | 4.0  |      | 4.0  | 4.0   |      |
| Lane Util. Factor      |      | 0.95 |      |      | 0.95  | 1.00 | 1.00  | 1.00 |      | 1.00 | 1.00  |      |
| Fr't                   |      | 1.00 |      |      | 1.00  | 0.85 | 1.00  | 0.99 |      | 1.00 | 0.98  |      |
| Flt Protected          |      | 1.00 |      |      | 1.00  | 1.00 | 0.95  | 1.00 |      | 0.95 | 1.00  |      |
| Satd. Flow (prot)      |      | 3539 |      |      | 3527  | 1583 | 1770  | 1850 |      | 1770 | 1819  |      |
| Flt Permitted          |      | 1.00 |      |      | 0.80  | 1.00 | 0.95  | 1.00 |      | 0.95 | 1.00  |      |
| Satd. Flow (perm)      |      | 3539 |      |      | 2815  | 1583 | 1770  | 1850 |      | 1770 | 1819  |      |
| Volume (vph)           | 0    | 777  | 0    | 73   | 966   | 190  | 106   | 397  | 19   | 97   | 427   | 79   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 0    | 777  | 0    | 73   | 966   | 190  | 106   | 397  | 19   | 97   | 427   | 79   |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 0     | 109  | 0     | 2    | 0    | 0    | 9     | 0    |
| Lane Group Flow (vph)  | 0    | 777  | 0    | 0    | 1039  | 81   | 106   | 414  | 0    | 97   | 497   | 0    |
| Turn Type              | Perm |      | Perm |      | Perm  | Prot | Prot  |      |      |      |       |      |
| Protected Phases       | 4    |      | 8    |      | 8     | 5    | 2     | 1    |      | 6    |       |      |
| Permitted Phases       | 4    |      | 8    |      | 8     |      |       |      |      |      |       |      |
| Actuated Green, G (s)  | 35.0 |      |      |      | 35.0  | 35.0 | 8.0   | 28.0 | 8.0  |      | 28.0  |      |
| Effective Green, g (s) | 34.0 |      |      |      | 34.0  | 34.0 | 7.0   | 27.0 | 7.0  |      | 27.0  |      |
| Actuated g/C Ratio     | 0.42 |      |      |      | 0.42  | 0.42 | 0.09  | 0.34 | 0.09 |      | 0.34  |      |
| Clearance Time (s)     | 3.0  |      |      |      | 3.0   | 3.0  | 3.0   | 3.0  | 3.0  |      | 3.0   |      |
| Lane Grp Cap (vph)     | 1504 |      |      |      | 1196  | 673  | 155   | 624  | 155  |      | 614   |      |
| v/s Ratio Prot         | 0.22 |      |      |      |       |      | c0.06 | 0.22 | 0.05 |      | c0.27 |      |
| v/s Ratio Perm         |      |      |      |      | c0.37 | 0.05 |       |      |      |      |       |      |
| v/c Ratio              | 0.52 |      |      |      | 0.87  | 0.12 | 0.68  | 0.66 | 0.63 |      | 0.81  |      |
| Uniform Delay, d1      | 16.9 |      |      |      | 21.0  | 13.9 | 35.4  | 22.6 | 35.2 |      | 24.2  |      |
| Progression Factor     | 0.44 |      |      |      | 1.00  | 1.00 | 1.00  | 1.00 | 0.66 |      | 1.25  |      |
| Incremental Delay, d2  | 0.9  |      |      |      | 8.7   | 0.4  | 21.8  | 5.5  | 12.0 |      | 7.6   |      |
| Delay (s)              | 8.4  |      |      |      | 29.6  | 14.3 | 57.2  | 28.1 | 35.3 |      | 37.9  |      |
| Level of Service       | A    |      |      |      | C     | B    | E     | C    | D    |      | D     |      |
| Approach Delay (s)     | 8.4  |      |      |      | 27.3  |      | 34.0  |      |      |      | 37.5  |      |
| Approach LOS           | A    |      |      |      | C     |      | C     |      |      |      | D     |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 25.7  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.83  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 96.8% | ICU Level of Service | F    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 3444: Q Street & 29th Street

6/1/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|-------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↻     |      | ↻    | ↻    |      |      |      |      |      | ↻↻↻  |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      |      |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 1.00  |      |      |      |      |      |      |      |      | 0.91 |      |
| Frt                    |      | 0.98  |      |      |      |      |      |      |      |      | 0.98 |      |
| Flt Protected          |      | 1.00  |      |      |      |      |      |      |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 1825  |      |      |      |      |      |      |      |      | 4970 |      |
| Flt Permitted          |      | 1.00  |      |      |      |      |      |      |      |      | 1.00 |      |
| Satd. Flow (perm)      |      | 1825  |      |      |      |      |      |      |      |      | 4970 |      |
| Volume (vph)           | 0    | 295   | 52   | 0    | 0    | 0    | 0    | 0    | 0    | 26   | 1437 | 250  |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 295   | 52   | 0    | 0    | 0    | 0    | 0    | 0    | 26   | 1437 | 250  |
| RTOR Reduction (vph)   | 0    | 8     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 30   | 0    |
| Lane Group Flow (vph)  | 0    | 339   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1683 | 0    |
| Turn Type              |      |       |      | Perm |      |      |      |      |      |      | Perm |      |
| Protected Phases       |      | 4     |      |      | 8    |      |      |      |      |      |      | 6    |
| Permitted Phases       |      |       |      | 8    |      |      |      |      |      |      | 6    |      |
| Actuated Green, G (s)  |      | 32.0  |      |      |      |      |      |      |      |      | 42.0 |      |
| Effective Green, g (s) |      | 31.0  |      |      |      |      |      |      |      |      | 41.0 |      |
| Actuated g/C Ratio     |      | 0.39  |      |      |      |      |      |      |      |      | 0.51 |      |
| Clearance Time (s)     |      | 3.0   |      |      |      |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 707   |      |      |      |      |      |      |      |      | 2547 |      |
| v/s Ratio Prot         |      | c0.19 |      |      |      |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |       |      |      |      |      |      |      |      |      | 0.34 |      |
| v/c Ratio              |      | 0.48  |      |      |      |      |      |      |      |      | 0.66 |      |
| Uniform Delay, d1      |      | 18.4  |      |      |      |      |      |      |      |      | 14.4 |      |
| Progression Factor     |      | 1.00  |      |      |      |      |      |      |      |      | 0.47 |      |
| Incremental Delay, d2  |      | 2.3   |      |      |      |      |      |      |      |      | 0.9  |      |
| Delay (s)              |      | 20.8  |      |      |      |      |      |      |      |      | 7.7  |      |
| Level of Service       |      | C     |      |      |      |      |      |      |      |      | A    |      |
| Approach Delay (s)     |      | 20.8  |      |      | 0.0  |      |      | 0.0  |      |      | 7.7  |      |
| Approach LOS           |      | C     |      |      | A    |      |      | A    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 9.9   | HCM Level of Service | A   |
| HCM Volume to Capacity ratio      | 0.58  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 59.2% | ICU Level of Service | B   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 3467: N Street & Alhambra

6/1/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|-------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations    |      | ↕     |      |      | ↕    |      |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      | 4.0  |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor      |      | 1.00  |      |      | 1.00 |      |      | 1.00 |      |      | 1.00  |      |
| Frt                    |      | 0.98  |      |      | 0.99 |      |      | 0.99 |      |      | 0.98  |      |
| Flt Protected          |      | 0.99  |      |      | 0.99 |      |      | 1.00 |      |      | 1.00  |      |
| Satd. Flow (prot)      |      | 1628  |      |      | 1644 |      |      | 1654 |      |      | 1636  |      |
| Flt Permitted          |      | 0.81  |      |      | 0.89 |      |      | 0.98 |      |      | 0.99  |      |
| Satd. Flow (perm)      |      | 1340  |      |      | 1481 |      |      | 1620 |      |      | 1625  |      |
| Volume (vph)           | 103  | 238   | 45   | 58   | 248  | 26   | 18   | 517  | 52   | 9    | 503   | 109  |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 103  | 238   | 45   | 58   | 248  | 26   | 18   | 517  | 52   | 9    | 503   | 109  |
| RTOR Reduction (vph)   | 0    | 6     | 0    | 0    | 4    | 0    | 0    | 5    | 0    | 0    | 10    | 0    |
| Lane Group Flow (vph)  | 0    | 380   | 0    | 0    | 328  | 0    | 0    | 583  | 0    | 0    | 612   | 0    |
| Parking (#/hr)         | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Turn Type              | Perm |       |      | Perm |      |      | Perm |      |      | Perm |       |      |
| Protected Phases       |      | 4     |      |      | 8    |      |      | 2    |      |      | 6     |      |
| Permitted Phases       | 4    |       |      | 8    |      |      | 2    |      |      | 6    |       |      |
| Actuated Green, G (s)  |      | 33.0  |      |      | 33.0 |      |      | 41.0 |      |      | 41.0  |      |
| Effective Green, g (s) |      | 32.0  |      |      | 32.0 |      |      | 40.0 |      |      | 40.0  |      |
| Actuated g/C Ratio     |      | 0.40  |      |      | 0.40 |      |      | 0.50 |      |      | 0.50  |      |
| Clearance Time (s)     |      | 3.0   |      |      | 3.0  |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)     |      | 536   |      |      | 592  |      |      | 810  |      |      | 813   |      |
| v/s Ratio Prot         |      |       |      |      |      |      |      |      |      |      |       |      |
| v/s Ratio Perm         |      | c0.28 |      |      | 0.22 |      |      | 0.36 |      |      | c0.38 |      |
| v/c Ratio              |      | 0.71  |      |      | 0.55 |      |      | 0.72 |      |      | 0.75  |      |
| Uniform Delay, d1      |      | 20.1  |      |      | 18.5 |      |      | 15.6 |      |      | 16.0  |      |
| Progression Factor     |      | 0.71  |      |      | 1.00 |      |      | 0.36 |      |      | 0.49  |      |
| Incremental Delay, d2  |      | 6.6   |      |      | 3.7  |      |      | 4.7  |      |      | 4.8   |      |
| Delay (s)              |      | 21.0  |      |      | 22.2 |      |      | 10.3 |      |      | 12.7  |      |
| Level of Service       |      | C     |      |      | C    |      |      | B    |      |      | B     |      |
| Approach Delay (s)     |      | 21.0  |      |      | 22.2 |      |      | 10.3 |      |      | 12.7  |      |
| Approach LOS           |      | C     |      |      | C    |      |      | B    |      |      | B     |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 15.2  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.73  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 80.6% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
5802: K Street & 29th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑    | ↑    | ↑    | ↑    |      |      |      |      |      | ↑↑   | ↑    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  | 4.0  | 4.0  |      |      |      |      |      | 4.0  | 4.0  |
| Lane Util. Factor      |      | 1.00 | 1.00 | 1.00 | 1.00 |      |      |      |      |      | 0.95 | 1.00 |
| Fr't                   |      | 1.00 | 0.85 | 1.00 | 1.00 |      |      |      |      |      | 1.00 | 0.85 |
| Flt Protected          |      | 1.00 | 1.00 | 0.95 | 1.00 |      |      |      |      |      | 0.99 | 1.00 |
| Satd. Flow (prot)      |      | 1863 | 1583 | 1770 | 1863 |      |      |      |      |      | 3515 | 1583 |
| Flt Permitted          |      | 1.00 | 1.00 | 0.38 | 1.00 |      |      |      |      |      | 0.99 | 1.00 |
| Satd. Flow (perm)      |      | 1863 | 1583 | 711  | 1863 |      |      |      |      |      | 3515 | 1583 |
| Volume (vph)           | 0    | 403  | 141  | 197  | 480  | 0    | 0    | 0    | 0    | 190  | 1182 | 316  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 403  | 141  | 197  | 480  | 0    | 0    | 0    | 0    | 190  | 1182 | 316  |
| RTOR Reduction (vph)   | 0    | 0    | 22   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 132  |
| Lane Group Flow (vph)  | 0    | 403  | 119  | 197  | 480  | 0    | 0    | 0    | 0    | 0    | 1372 | 184  |
| Turn Type              |      |      | Perm | Perm |      |      |      |      |      | Perm |      | Perm |
| Protected Phases       |      | 4    |      |      | 8    |      |      |      |      |      | 6    |      |
| Permitted Phases       |      |      | 4    | 8    |      |      |      |      |      | 6    |      | 6    |
| Actuated Green, G (s)  |      | 35.0 | 35.0 | 35.0 | 35.0 |      |      |      |      |      | 39.0 | 39.0 |
| Effective Green, g (s) |      | 34.0 | 34.0 | 34.0 | 34.0 |      |      |      |      |      | 38.0 | 38.0 |
| Actuated g/C Ratio     |      | 0.42 | 0.42 | 0.42 | 0.42 |      |      |      |      |      | 0.48 | 0.48 |
| Clearance Time (s)     |      | 3.0  | 3.0  | 3.0  | 3.0  |      |      |      |      |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |      | 792  | 673  | 302  | 792  |      |      |      |      |      | 1670 | 752  |
| v/s Ratio Prot         |      | 0.22 |      |      | 0.26 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      | 0.08 | 0.28 |      |      |      |      |      |      | 0.39 | 0.12 |
| v/c Ratio              |      | 0.51 | 0.18 | 0.65 | 0.61 |      |      |      |      |      | 0.82 | 0.24 |
| Uniform Delay, d1      |      | 16.9 | 14.3 | 18.3 | 17.8 |      |      |      |      |      | 18.1 | 12.5 |
| Progression Factor     |      | 0.88 | 0.77 | 0.52 | 0.49 |      |      |      |      |      | 0.94 | 0.02 |
| Incremental Delay, d2  |      | 2.2  | 0.5  | 9.0  | 2.9  |      |      |      |      |      | 1.7  | 0.4  |
| Delay (s)              |      | 17.0 | 11.6 | 18.5 | 11.6 |      |      |      |      |      | 18.6 | 0.7  |
| Level of Service       |      | B    | B    | B    | B    |      |      |      |      |      | B    | A    |
| Approach Delay (s)     |      | 15.6 |      |      | 13.6 |      |      | 0.0  |      |      | 15.3 |      |
| Approach LOS           |      | B    |      |      | B    |      |      | A    |      |      | B    |      |

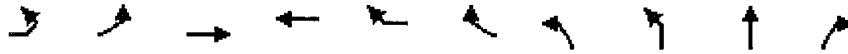
Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 14.9  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.74  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 80.3% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 5848: J Street & 30th Street

6/1/2005



| Movement                          | EBL2 | EBL   | EBT   | WBT   | WBR                  | WBR2 | NBL2 | NBL   | NBT  | NBR  |
|-----------------------------------|------|-------|-------|-------|----------------------|------|------|-------|------|------|
| Lane Configurations               |      |       |       |       |                      |      |      |       |      |      |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900  | 1900  | 1900                 | 1900 | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0   | 4.0   | 4.0   |                      |      |      | 4.0   | 4.0  |      |
| Lane Util. Factor                 |      | 1.00  | 0.95  | 1.00  |                      |      |      | 0.91  | 0.91 |      |
| Frt                               |      | 1.00  | 1.00  | 0.90  |                      |      |      | 1.00  | 0.98 |      |
| Flt Protected                     |      | 0.95  | 1.00  | 1.00  |                      |      |      | 0.95  | 0.99 |      |
| Satd. Flow (prot)                 |      | 1770  | 3362  | 1505  |                      |      |      | 1610  | 3280 |      |
| Flt Permitted                     |      | 0.95  | 1.00  | 1.00  |                      |      |      | 0.95  | 0.99 |      |
| Satd. Flow (perm)                 |      | 1770  | 3362  | 1505  |                      |      |      | 1610  | 3280 |      |
| Volume (vph)                      | 182  | 194   | 996   | 108   | 338                  | 3    | 37   | 313   | 363  | 88   |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00  | 1.00  | 1.00                 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 182  | 194   | 996   | 108   | 338                  | 3    | 37   | 313   | 363  | 88   |
| RTOR Reduction (vph)              | 0    | 0     | 0     | 0     | 0                    | 0    | 0    | 0     | 19   | 0    |
| Lane Group Flow (vph)             | 0    | 376   | 996   | 449   | 0                    | 0    | 0    | 259   | 523  | 0    |
| Parking (#/hr)                    |      |       | 0     | 0     | 0                    | 0    |      |       |      | 0    |
| Turn Type                         | Prot | Prot  |       |       |                      |      | Perm | Perm  |      |      |
| Protected Phases                  | 7    | 7     | 4     | 8     |                      |      |      |       | 2    |      |
| Permitted Phases                  |      |       |       |       |                      |      | 2    | 2     |      |      |
| Actuated Green, G (s)             |      | 22.0  | 55.0  | 30.0  |                      |      |      | 19.0  | 19.0 |      |
| Effective Green, g (s)            |      | 21.0  | 54.0  | 29.0  |                      |      |      | 18.0  | 18.0 |      |
| Actuated g/C Ratio                |      | 0.26  | 0.68  | 0.36  |                      |      |      | 0.22  | 0.22 |      |
| Clearance Time (s)                |      | 3.0   | 3.0   | 3.0   |                      |      |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)                |      | 465   | 2269  | 546   |                      |      |      | 362   | 738  |      |
| v/s Ratio Prot                    |      | c0.21 | 0.30  | c0.30 |                      |      |      |       |      |      |
| v/s Ratio Perm                    |      |       |       |       |                      |      |      | c0.16 | 0.16 |      |
| v/c Ratio                         |      | 0.81  | 0.44  | 0.82  |                      |      |      | 0.72  | 0.71 |      |
| Uniform Delay, d1                 |      | 27.6  | 6.0   | 23.2  |                      |      |      | 28.6  | 28.6 |      |
| Progression Factor                |      | 0.83  | 0.23  | 0.63  |                      |      |      | 0.58  | 0.56 |      |
| Incremental Delay, d2             |      | 7.6   | 0.3   | 7.7   |                      |      |      | 9.9   | 4.9  |      |
| Delay (s)                         |      | 30.4  | 1.7   | 22.4  |                      |      |      | 26.5  | 20.8 |      |
| Level of Service                  |      | C     | A     | C     |                      |      |      | C     | C    |      |
| Approach Delay (s)                |      |       | 9.6   | 22.4  |                      |      |      |       | 22.6 |      |
| Approach LOS                      |      |       | A     | C     |                      |      |      |       | C    |      |
| <b>Intersection Summary</b>       |      |       |       |       |                      |      |      |       |      |      |
| HCM Average Control Delay         |      |       | 15.8  |       | HCM Level of Service |      |      |       | B    |      |
| HCM Volume to Capacity ratio      |      |       | 0.79  |       |                      |      |      |       |      |      |
| Actuated Cycle Length (s)         |      |       | 80.0  |       | Sum of lost time (s) |      |      |       | 12.0 |      |
| Intersection Capacity Utilization |      |       | 72.8% |       | ICU Level of Service |      |      |       | C    |      |
| Analysis Period (min)             |      |       | 15    |       |                      |      |      |       |      |      |
| c Critical Lane Group             |      |       |       |       |                      |      |      |       |      |      |

HCM Signalized Intersection Capacity Analysis  
5849: L Street & 30th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|-------|------|------|------|------|
| Lane Configurations    |      |      |      |      | ↑↑    | ↑    | ↘    | ↙↑↑   |      |      |      |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      |      |      | 4.0   | 4.0  | 4.0  | 4.0   |      |      |      |      |
| Lane Util. Factor      |      |      |      |      | 0.95  | 1.00 | 0.86 | 0.86  |      |      |      |      |
| Flt                    |      |      |      |      | 1.00  | 0.85 | 1.00 | 1.00  |      |      |      |      |
| Flt Protected          |      |      |      |      | 1.00  | 1.00 | 0.95 | 1.00  |      |      |      |      |
| Satd. Flow (prot)      |      |      |      |      | 3539  | 1425 | 1522 | 4646  |      |      |      |      |
| Flt Permitted          |      |      |      |      | 1.00  | 1.00 | 0.95 | 1.00  |      |      |      |      |
| Satd. Flow (perm)      |      |      |      |      | 3539  | 1425 | 1522 | 4646  |      |      |      |      |
| Volume (vph)           | 0    | 0    | 0    | 0    | 444   | 100  | 175  | 1255  | 0    | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 0    | 444   | 100  | 175  | 1255  | 0    | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 0     | 30   | 81   | 0     | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 0    | 444   | 70   | 94   | 1255  | 0    | 0    | 0    | 0    |
| Parking (#/hr)         |      |      |      |      |       | 0    |      | 0     |      |      |      |      |
| Turn Type              |      |      |      |      |       | Perm | Perm |       |      |      |      |      |
| Protected Phases       |      |      |      |      | 8     |      |      | 2     |      |      |      |      |
| Permitted Phases       |      |      |      |      |       | 8    |      | 2     |      |      |      |      |
| Actuated Green, G (s)  |      |      |      |      | 30.0  | 30.0 | 44.0 | 44.0  |      |      |      |      |
| Effective Green, g (s) |      |      |      |      | 29.0  | 29.0 | 43.0 | 43.0  |      |      |      |      |
| Actuated g/C Ratio     |      |      |      |      | 0.36  | 0.36 | 0.54 | 0.54  |      |      |      |      |
| Clearance Time (s)     |      |      |      |      | 3.0   | 3.0  | 3.0  | 3.0   |      |      |      |      |
| Lane Grp Cap (vph)     |      |      |      |      | 1283  | 517  | 818  | 2497  |      |      |      |      |
| v/s Ratio Prot         |      |      |      |      | c0.13 |      |      | c0.27 |      |      |      |      |
| v/s Ratio Perm         |      |      |      |      |       | 0.05 | 0.06 |       |      |      |      |      |
| v/c Ratio              |      |      |      |      | 0.35  | 0.14 | 0.11 | 0.50  |      |      |      |      |
| Uniform Delay, d1      |      |      |      |      | 18.6  | 17.1 | 9.1  | 11.7  |      |      |      |      |
| Progression Factor     |      |      |      |      | 0.80  | 0.77 | 0.40 | 0.79  |      |      |      |      |
| Incremental Delay, d2  |      |      |      |      | 0.7   | 0.5  | 0.3  | 0.7   |      |      |      |      |
| Delay (s)              |      |      |      |      | 15.5  | 13.7 | 3.9  | 10.0  |      |      |      |      |
| Level of Service       |      |      |      |      | B     | B    | A    | A     |      |      |      |      |
| Approach Delay (s)     |      | 0.0  |      |      | 15.2  |      |      | 9.2   |      |      | 0.0  |      |
| Approach LOS           |      | A    |      |      | B     |      |      | A     |      |      | A    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 10.9  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.44  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 82.8% | ICU Level of Service | E   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
5880: N Street & 30th Street

6/1/2005



| Movement                  | EBL  | EBT  | WBT   | WBR  | NBL  | NBT   | NBR  | NEL2 | NEL    | NER  |
|---------------------------|------|------|-------|------|------|-------|------|------|--------|------|
| Lane Configurations       | ↖    | ↑    | ↗     |      |      | ↖↗    |      |      | ↖↗     |      |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900   | 1900 |
| Total Lost time (s)       | 4.0  | 4.0  | 4.0   |      |      | 4.0   |      |      | 4.0    |      |
| Lane Util. Factor         | 1.00 | 1.00 | 1.00  |      |      | 0.91  |      |      | 0.97   |      |
| Fr <sub>t</sub>           | 1.00 | 1.00 | 0.98  |      |      | 0.99  |      |      | 0.99   |      |
| Fl <sub>t</sub> Protected | 0.95 | 1.00 | 1.00  |      |      | 0.99  |      |      | 0.96   |      |
| Satd. Flow (prot)         | 1770 | 1863 | 1642  |      |      | 4795  |      |      | 3420   |      |
| Fl <sub>t</sub> Permitted | 0.37 | 1.00 | 1.00  |      |      | 0.99  |      |      | 0.96   |      |
| Satd. Flow (perm)         | 688  | 1863 | 1642  |      |      | 4795  |      |      | 3420   |      |
| Volume (vph)              | 68   | 326  | 298   | 54   | 158  | 373   | 43   | 523  | 186    | 47   |
| Peak-hour factor, PHF     | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00   | 1.00 |
| Adj. Flow (vph)           | 68   | 326  | 298   | 54   | 158  | 373   | 43   | 523  | 186    | 47   |
| RTOR Reduction (vph)      | 0    | 0    | 8     | 0    | 0    | 11    | 0    | 0    | 0      | 0    |
| Lane Group Flow (vph)     | 68   | 326  | 344   | 0    | 0    | 563   | 0    | 0    | 756    | 0    |
| Parking (#/hr)            |      |      | 0     | 0    |      | 0     | 0    |      |        |      |
| Turn Type                 | Perm |      | Perm  |      |      | Split |      |      |        |      |
| Protected Phases          |      | 4    | 8     |      |      | 2     |      | 6    | 6      |      |
| Permitted Phases          | 4    |      |       |      | 2    |       |      |      |        |      |
| Actuated Green, G (s)     | 28.0 | 28.0 | 28.0  |      |      | 17.0  |      |      | 26.0   |      |
| Effective Green, g (s)    | 27.0 | 27.0 | 27.0  |      |      | 16.0  |      |      | 25.0   |      |
| Actuated g/C Ratio        | 0.34 | 0.34 | 0.34  |      |      | 0.20  |      |      | 0.31   |      |
| Clearance Time (s)        | 3.0  | 3.0  | 3.0   |      |      | 3.0   |      |      | 3.0    |      |
| Lane Grp Cap (vph)        | 232  | 629  | 554   |      |      | 959   |      |      | 1069   |      |
| v/s Ratio Prot            |      | 0.18 | c0.21 |      |      |       |      |      | c0.22  |      |
| v/s Ratio Perm            | 0.10 |      |       |      |      | 0.12  |      |      |        |      |
| v/c Ratio                 | 0.29 | 0.52 | 0.62  |      |      | 0.59  |      |      | 0.95dl |      |
| Uniform Delay, d1         | 19.5 | 21.3 | 22.2  |      |      | 29.0  |      |      | 24.3   |      |
| Progression Factor        | 0.10 | 0.10 | 0.60  |      |      | 0.71  |      |      | 1.00   |      |
| Incremental Delay, d2     | 0.9  | 0.9  | 4.1   |      |      | 2.5   |      |      | 3.9    |      |
| Delay (s)                 | 3.0  | 3.1  | 17.4  |      |      | 23.0  |      |      | 28.2   |      |
| Level of Service          | A    | A    | B     |      |      | C     |      |      | C      |      |
| Approach Delay (s)        |      | 3.0  | 17.4  |      |      | 23.0  |      |      | 28.2   |      |
| Approach LOS              |      | A    | B     |      |      | C     |      |      | C      |      |

Intersection Summary

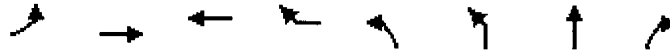
|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 20.2  | HCM Level of Service | C    |
| HCM Volume to Capacity ratio      | 0.64  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 76.4% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 5882: P Street & 30th Street

6/1/2005



| Movement                          | EBL  | EBT   | WBT  | WBR  | NBL2 | NBL   | NBT  | NBR  |
|-----------------------------------|------|-------|------|------|------|-------|------|------|
| Lane Configurations               | ↖    | ↑     | ↗    |      | ↙    | ↓     | ↘    |      |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)               | 4.0  | 4.0   | 4.0  |      | 4.0  | 4.0   | 4.0  |      |
| Lane Util. Factor                 | 1.00 | 1.00  | 0.95 |      | 1.00 | 0.91  | 0.91 |      |
| Fr <sub>t</sub>                   | 1.00 | 1.00  | 1.00 |      | 1.00 | 1.00  | 0.98 |      |
| Fl <sub>t</sub> Protected         | 0.95 | 1.00  | 1.00 |      | 0.95 | 0.95  | 0.99 |      |
| Satd. Flow (prot)                 | 1770 | 1863  | 3537 |      | 1593 | 1449  | 3118 |      |
| Fl <sub>t</sub> Permitted         | 0.33 | 1.00  | 1.00 |      | 0.95 | 0.95  | 0.99 |      |
| Satd. Flow (perm)                 | 606  | 1863  | 3537 |      | 1593 | 1449  | 3118 |      |
| Volume (vph)                      | 161  | 843   | 775  | 3    | 123  | 355   | 280  | 56   |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 161  | 843   | 775  | 3    | 123  | 355   | 280  | 56   |
| RTOR Reduction (vph)              | 0    | 0     | 0    | 0    | 0    | 0     | 13   | 0    |
| Lane Group Flow (vph)             | 161  | 843   | 778  | 0    | 123  | 216   | 462  | 0    |
| Parking (#/hr)                    |      |       |      | 0    | 0    | 0     | 0    |      |
| Turn Type                         | Perm |       |      |      | Perm |       | Perm |      |
| Protected Phases                  |      | 4     | 8    |      |      |       | 2    |      |
| Permitted Phases                  | 4    |       |      |      | 2    | 2     |      |      |
| Actuated Green, G (s)             | 52.0 | 52.0  | 52.0 |      | 22.0 | 22.0  | 22.0 |      |
| Effective Green, g (s)            | 51.0 | 51.0  | 51.0 |      | 21.0 | 21.0  | 21.0 |      |
| Actuated g/C Ratio                | 0.64 | 0.64  | 0.64 |      | 0.26 | 0.26  | 0.26 |      |
| Clearance Time (s)                | 3.0  | 3.0   | 3.0  |      | 3.0  | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)                | 386  | 1188  | 2255 |      | 418  | 380   | 818  |      |
| v/s Ratio Prot                    |      | c0.45 | 0.22 |      |      |       |      |      |
| v/s Ratio Perm                    | 0.27 |       |      |      | 0.08 | c0.15 | 0.15 |      |
| v/c Ratio                         | 0.42 | 0.71  | 0.35 |      | 0.29 | 0.57  | 0.57 |      |
| Uniform Delay, d <sub>1</sub>     | 7.2  | 9.6   | 6.7  |      | 23.6 | 25.6  | 25.5 |      |
| Progression Factor                | 1.00 | 1.02  | 0.72 |      | 1.00 | 1.00  | 1.00 |      |
| Incremental Delay, d <sub>2</sub> | 2.5  | 2.8   | 0.2  |      | 1.8  | 6.1   | 2.8  |      |
| Delay (s)                         | 9.6  | 12.5  | 5.0  |      | 25.4 | 31.6  | 28.4 |      |
| Level of Service                  | A    | B     | A    |      | C    | C     | C    |      |
| Approach Delay (s)                |      | 12.1  | 5.0  |      |      |       | 28.8 |      |
| Approach LOS                      |      | B     | A    |      |      |       | C    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 15.2  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.67  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 64.3% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



HCM Signalized Intersection Capacity Analysis  
5886: Capitol & 30th Street

6/1/2005



| Movement                          | EBL   | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|-------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations               | ↙     | ↗    |      |      | ↕     |      |      | ↕    |      |      |      |      |
| Ideal Flow (vphpl)                | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               | 4.0   | 4.0  |      |      | 4.0   |      |      | 4.0  |      |      |      |      |
| Lane Util. Factor                 | 1.00  | 0.95 |      |      | 0.95  |      |      | 0.91 |      |      |      |      |
| Fr <sub>t</sub>                   | 1.00  | 1.00 |      |      | 0.98  |      |      | 0.96 |      |      |      |      |
| Fl <sub>t</sub> Protected         | 0.95  | 1.00 |      |      | 1.00  |      |      | 0.99 |      |      |      |      |
| Satd. Flow (prot)                 | 1770  | 3539 |      |      | 3485  |      |      | 4834 |      |      |      |      |
| Fl <sub>t</sub> Permitted         | 0.95  | 1.00 |      |      | 1.00  |      |      | 0.99 |      |      |      |      |
| Satd. Flow (perm)                 | 1770  | 3539 |      |      | 3485  |      |      | 4834 |      |      |      |      |
| Volume (vph)                      | 112   | 401  | 0    | 0    | 467   | 53   | 68   | 353  | 175  | 0    | 0    | 0    |
| Peak-hour factor, PHF             | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 112   | 401  | 0    | 0    | 467   | 53   | 68   | 353  | 175  | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0     | 0    | 0    | 0    | 11    | 0    | 0    | 94   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 112   | 401  | 0    | 0    | 509   | 0    | 0    | 502  | 0    | 0    | 0    | 0    |
| Turn Type                         | Prot  |      |      | Perm |       |      |      |      |      |      |      |      |
| Protected Phases                  | 7     | 4    |      |      | 8     |      |      | 2    |      |      |      |      |
| Permitted Phases                  |       |      |      |      |       |      |      | 2    |      |      |      |      |
| Actuated Green, G (s)             | 19.0  | 49.0 |      |      | 27.0  |      |      | 25.0 |      |      |      |      |
| Effective Green, g (s)            | 18.0  | 48.0 |      |      | 26.0  |      |      | 24.0 |      |      |      |      |
| Actuated g/C Ratio                | 0.22  | 0.60 |      |      | 0.32  |      |      | 0.30 |      |      |      |      |
| Clearance Time (s)                | 3.0   | 3.0  |      |      | 3.0   |      |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)                | 398   | 2123 |      |      | 1133  |      |      | 1450 |      |      |      |      |
| v/s Ratio Prot                    | c0.06 | 0.11 |      |      | c0.15 |      |      |      |      |      |      |      |
| v/s Ratio Perm                    |       |      |      |      |       |      |      | 0.10 |      |      |      |      |
| v/c Ratio                         | 0.28  | 0.19 |      |      | 0.45  |      |      | 0.35 |      |      |      |      |
| Uniform Delay, d <sub>1</sub>     | 25.6  | 7.2  |      |      | 21.3  |      |      | 21.9 |      |      |      |      |
| Progression Factor                | 0.58  | 0.47 |      |      | 1.27  |      |      | 0.57 |      |      |      |      |
| Incremental Delay, d <sub>2</sub> | 1.5   | 0.2  |      |      | 0.3   |      |      | 0.5  |      |      |      |      |
| Delay (s)                         | 16.4  | 3.5  |      |      | 27.4  |      |      | 13.0 |      |      |      |      |
| Level of Service                  | B     | A    |      |      | C     |      |      | B    |      |      |      |      |
| Approach Delay (s)                |       | 6.4  |      |      | 27.4  |      |      | 13.0 |      |      | 0.0  |      |
| Approach LOS                      |       | A    |      |      | C     |      |      | B    |      |      | A    |      |

Intersection Summary

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 15.5  | HCM Level of Service | B    |
| HCM Volume to Capacity ratio      | 0.37  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 81.2% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
5888: Capitol & 29th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL   | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|-------|------|------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑↑   |      | ↑     | ↑↑   |      |      |      |      |      | ↑↑↑  |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      | 4.0   | 4.0  |      |      |      |      |      | 4.0  |      |
| Lane Util. Factor      |      | 0.95 |      | 1.00  | 0.95 |      |      |      |      |      | 0.91 |      |
| Fr't                   |      | 0.95 |      | 1.00  | 1.00 |      |      |      |      |      | 0.99 |      |
| Flt Protected          |      | 1.00 |      | 0.95  | 1.00 |      |      |      |      |      | 1.00 |      |
| Satd. Flow (prot)      |      | 3179 |      | 1770  | 3539 |      |      |      |      |      | 4855 |      |
| Flt Permitted          |      | 1.00 |      | 0.34  | 1.00 |      |      |      |      |      | 1.00 |      |
| Satd. Flow (perm)      |      | 3179 |      | 627   | 3539 |      |      |      |      |      | 4855 |      |
| Volume (vph)           | 0    | 394  | 225  | 198   | 413  | 0    | 0    | 0    | 0    | 123  | 1894 | 138  |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 394  | 225  | 198   | 413  | 0    | 0    | 0    | 0    | 123  | 1894 | 138  |
| RTOR Reduction (vph)   | 0    | 3    | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 10   | 0    |
| Lane Group Flow (vph)  | 0    | 616  | 0    | 198   | 413  | 0    | 0    | 0    | 0    | 0    | 2145 | 0    |
| Parking (#/hr)         |      | 0    | 0    |       |      |      |      |      |      |      | 0    | 0    |
| Turn Type              |      |      |      | Perm  |      |      |      |      |      |      | Perm |      |
| Protected Phases       |      | 4    |      |       | 8    |      |      |      |      |      |      | 6    |
| Permitted Phases       |      |      |      | 8     |      |      |      |      |      | 6    |      |      |
| Actuated Green, G (s)  |      | 34.0 |      | 34.0  | 34.0 |      |      |      |      |      | 40.0 |      |
| Effective Green, g (s) |      | 33.0 |      | 33.0  | 33.0 |      |      |      |      |      | 39.0 |      |
| Actuated g/C Ratio     |      | 0.41 |      | 0.41  | 0.41 |      |      |      |      |      | 0.49 |      |
| Clearance Time (s)     |      | 3.0  |      | 3.0   | 3.0  |      |      |      |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 1311 |      | 259   | 1460 |      |      |      |      |      | 2367 |      |
| v/s Ratio Prot         |      | 0.19 |      |       | 0.12 |      |      |      |      |      |      |      |
| v/s Ratio Perm         |      |      |      | c0.32 |      |      |      |      |      |      | 0.44 |      |
| v/c Ratio              |      | 0.47 |      | 0.76  | 0.28 |      |      |      |      |      | 0.91 |      |
| Uniform Delay, d1      |      | 17.1 |      | 20.2  | 15.6 |      |      |      |      |      | 18.8 |      |
| Progression Factor     |      | 0.93 |      | 0.58  | 0.30 |      |      |      |      |      | 0.55 |      |
| Incremental Delay, d2  |      | 0.6  |      | 18.1  | 0.5  |      |      |      |      |      | 4.7  |      |
| Delay (s)              |      | 16.5 |      | 29.7  | 5.2  |      |      |      |      |      | 15.1 |      |
| Level of Service       |      | B    |      | C     | A    |      |      |      |      |      | B    |      |
| Approach Delay (s)     |      | 16.5 |      |       | 13.1 |      |      | 0.0  |      |      | 15.1 |      |
| Approach LOS           |      | B    |      |       | B    |      |      | A    |      |      | B    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 15.0  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.84  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 81.2% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
5890: Capitol & 26th Street

6/1/2005



| Movement                          | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|-----------------------------------|------|------|------|------|-------|------|------|------|------|------|-------|------|
| Lane Configurations               | ↖    | ↗    |      | ↖    | ↗     |      |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)               | 4.0  | 4.0  |      | 4.0  | 4.0   |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor                 | 1.00 | 1.00 |      | 1.00 | 1.00  |      |      | 1.00 |      |      | 1.00  |      |
| Fr <sub>t</sub>                   | 1.00 | 1.00 |      | 1.00 | 0.99  |      |      | 0.97 |      |      | 0.98  |      |
| Fl <sub>t</sub> Protected         | 0.95 | 1.00 |      | 0.95 | 1.00  |      |      | 0.99 |      |      | 0.99  |      |
| Satd. Flow (prot)                 | 1770 | 1672 |      | 1770 | 1667  |      |      | 1619 |      |      | 1628  |      |
| Fl <sub>t</sub> Permitted         | 0.28 | 1.00 |      | 0.34 | 1.00  |      |      | 0.96 |      |      | 0.94  |      |
| Satd. Flow (perm)                 | 525  | 1672 |      | 627  | 1667  |      |      | 1568 |      |      | 1553  |      |
| Volume (vph)                      | 10   | 596  | 10   | 19   | 663   | 25   | 13   | 47   | 14   | 21   | 59    | 12   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)                   | 10   | 596  | 10   | 19   | 663   | 25   | 13   | 47   | 14   | 21   | 59    | 12   |
| RTOR Reduction (vph)              | 0    | 1    | 0    | 0    | 2     | 0    | 0    | 10   | 0    | 0    | 9     | 0    |
| Lane Group Flow (vph)             | 10   | 605  | 0    | 19   | 686   | 0    | 0    | 64   | 0    | 0    | 83    | 0    |
| Parking (#/hr)                    |      | 0    | 0    |      | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Turn Type                         | Perm |      | Perm |      | Perm  |      | Perm |      | Perm |      | Perm  |      |
| Protected Phases                  | 4    |      | 8    |      | 8     |      | 2    |      | 6    |      | 6     |      |
| Permitted Phases                  | 4    |      | 8    |      | 8     |      | 2    |      | 6    |      | 6     |      |
| Actuated Green, G (s)             | 37.0 | 37.0 |      | 37.0 | 37.0  |      |      | 17.0 |      |      | 17.0  |      |
| Effective Green, g (s)            | 36.0 | 36.0 |      | 36.0 | 36.0  |      |      | 16.0 |      |      | 16.0  |      |
| Actuated g/C Ratio                | 0.60 | 0.60 |      | 0.60 | 0.60  |      |      | 0.27 |      |      | 0.27  |      |
| Clearance Time (s)                | 3.0  | 3.0  |      | 3.0  | 3.0   |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)                | 315  | 1003 |      | 376  | 1000  |      |      | 418  |      |      | 414   |      |
| v/s Ratio Prot                    |      | 0.36 |      |      | c0.41 |      |      |      |      |      |       |      |
| v/s Ratio Perm                    | 0.02 |      |      | 0.03 |       |      |      | 0.04 |      |      | c0.05 |      |
| v/c Ratio                         | 0.03 | 0.60 |      | 0.05 | 0.69  |      |      | 0.15 |      |      | 0.20  |      |
| Uniform Delay, d <sub>1</sub>     | 4.9  | 7.5  |      | 5.0  | 8.2   |      |      | 16.8 |      |      | 17.0  |      |
| Progression Factor                | 1.00 | 1.00 |      | 1.00 | 1.00  |      |      | 1.00 |      |      | 0.72  |      |
| Incremental Delay, d <sub>2</sub> | 0.2  | 2.7  |      | 0.3  | 3.8   |      |      | 0.8  |      |      | 1.1   |      |
| Delay (s)                         | 5.1  | 10.2 |      | 5.2  | 12.0  |      |      | 17.6 |      |      | 13.3  |      |
| Level of Service                  | A    | B    |      | A    | B     |      |      | B    |      |      | B     |      |
| Approach Delay (s)                |      | 10.1 |      |      | 11.8  |      |      | 17.6 |      |      | 13.3  |      |
| Approach LOS                      |      | B    |      |      | B     |      |      | B    |      |      | B     |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 11.5  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.54  |                      |     |
| Actuated Cycle Length (s)         | 60.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 50.4% | ICU Level of Service | A   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

# HCM Signalized Intersection Capacity Analysis

6481: J Street & 28th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR    | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|------|--------|------|------|------|------|------|------|
| Lane Configurations    |      | ↑↑↑  |      |      |      | ↑      |      | ↑    |      |      | ↑    |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900   | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      |      |      |        |      | 4.0  |      |      | 4.0  |      |
| Lane Util. Factor      |      | 0.91 |      |      |      |        |      | 1.00 |      |      | 1.00 |      |
| Frt                    |      | 0.99 |      |      |      |        |      | 0.93 |      |      | 1.00 |      |
| Flt Protected          |      | 1.00 |      |      |      |        |      | 1.00 |      |      | 0.99 |      |
| Satd. Flow (prot)      |      | 4886 |      |      |      |        |      | 1558 |      |      | 1663 |      |
| Flt Permitted          |      | 1.00 |      |      |      |        |      | 1.00 |      |      | 0.94 |      |
| Satd. Flow (perm)      |      | 4886 |      |      |      |        |      | 1558 |      |      | 1581 |      |
| Volume (vph)           | 26   | 1899 | 71   | 0    | 0    | 0      | 0    | 187  | 206  | 10   | 52   | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00   | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 26   | 1899 | 71   | 0    | 0    | 0      | 0    | 187  | 206  | 10   | 52   | 0    |
| RTOR Reduction (vph)   | 0    | 5    | 0    | 0    | 0    | 0      | 0    | 4    | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 1991 | 0    | 0    | 0    | 0      | 0    | 389  | 0    | 0    | 62   | 0    |
| Parking (#/hr)         | 0    | 0    | 0    |      |      |        |      | 0    | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      |      |      |      | custom |      |      |      | Perm |      |      |
| Protected Phases       |      | 4    |      |      |      |        |      | 2    |      |      | 6    |      |
| Permitted Phases       | 4    |      |      |      |      | 8      |      |      |      | 6    |      |      |
| Actuated Green, G (s)  |      | 41.0 |      |      |      |        |      | 33.0 |      |      | 33.0 |      |
| Effective Green, g (s) |      | 40.0 |      |      |      |        |      | 32.0 |      |      | 32.0 |      |
| Actuated g/C Ratio     |      | 0.50 |      |      |      |        |      | 0.40 |      |      | 0.40 |      |
| Clearance Time (s)     |      | 3.0  |      |      |      |        |      | 3.0  |      |      | 3.0  |      |
| Lane Grp Cap (vph)     |      | 2443 |      |      |      |        |      | 623  |      |      | 632  |      |
| v/s Ratio Prot         |      |      |      |      |      |        |      | 0.25 |      |      |      |      |
| v/s Ratio Perm         |      | 0.41 |      |      |      |        |      |      |      |      | 0.04 |      |
| v/c Ratio              |      | 0.81 |      |      |      |        |      | 0.63 |      |      | 0.10 |      |
| Uniform Delay, d1      |      | 16.9 |      |      |      |        |      | 19.2 |      |      | 15.0 |      |
| Progression Factor     |      | 1.00 |      |      |      |        |      | 0.56 |      |      | 1.00 |      |
| Incremental Delay, d2  |      | 3.1  |      |      |      |        |      | 4.6  |      |      | 0.3  |      |
| Delay (s)              |      | 20.0 |      |      |      |        |      | 15.3 |      |      | 15.3 |      |
| Level of Service       |      | C    |      |      |      |        |      | B    |      |      | B    |      |
| Approach Delay (s)     |      | 20.0 |      |      | 0.0  |        |      | 15.3 |      |      | 15.3 |      |
| Approach LOS           |      | C    |      |      | A    |        |      | B    |      |      | B    |      |

## Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 19.1  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.73  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 67.9% | ICU Level of Service | C   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis

6482: K Street & 28th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|-------|------|------|------|------|
| Lane Configurations    |      | ↕    | ↗    |      | ↕     | ↗    |      | ↕     | ↗    |      | ↕    | ↗    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  | 4.0  |      | 4.0   | 4.0  |      | 4.0   | 4.0  |      | 4.0  | 4.0  |
| Lane Util. Factor      |      | 1.00 | 1.00 |      | 1.00  | 1.00 |      | 1.00  | 1.00 |      | 1.00 | 1.00 |
| Fr't                   |      | 1.00 | 0.85 |      | 1.00  | 0.85 |      | 1.00  | 0.85 |      | 1.00 | 0.85 |
| Flt Protected          |      | 1.00 | 1.00 |      | 1.00  | 1.00 |      | 0.99  | 1.00 |      | 0.99 | 1.00 |
| Satd. Flow (prot)      |      | 1672 | 1425 |      | 1671  | 1425 |      | 1661  | 1425 |      | 1660 | 1425 |
| Flt Permitted          |      | 0.96 | 1.00 |      | 0.96  | 1.00 |      | 0.92  | 1.00 |      | 0.91 | 1.00 |
| Satd. Flow (perm)      |      | 1604 | 1425 |      | 1616  | 1425 |      | 1536  | 1425 |      | 1526 | 1425 |
| Volume (vph)           | 20   | 319  | 158  | 42   | 624   | 121  | 47   | 203   | 228  | 37   | 154  | 33   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 20   | 319  | 158  | 42   | 624   | 121  | 47   | 203   | 228  | 37   | 154  | 33   |
| RTOR Reduction (vph)   | 0    | 0    | 63   | 0    | 0     | 28   | 0    | 0     | 160  | 0    | 0    | 23   |
| Lane Group Flow (vph)  | 0    | 339  | 95   | 0    | 666   | 93   | 0    | 250   | 68   | 0    | 191  | 10   |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      | Perm | Perm |       | Perm | Perm |       | Perm | Perm |      | Perm |
| Protected Phases       |      | 4    |      |      | 8     |      |      | 2     |      |      | 6    |      |
| Permitted Phases       | 4    |      | 4    | 8    |       | 8    | 2    |       | 2    | 6    |      | 6    |
| Actuated Green, G (s)  |      | 49.0 | 49.0 |      | 49.0  | 49.0 |      | 25.0  | 25.0 |      | 25.0 | 25.0 |
| Effective Green, g (s) |      | 48.0 | 48.0 |      | 48.0  | 48.0 |      | 24.0  | 24.0 |      | 24.0 | 24.0 |
| Actuated g/C Ratio     |      | 0.60 | 0.60 |      | 0.60  | 0.60 |      | 0.30  | 0.30 |      | 0.30 | 0.30 |
| Clearance Time (s)     |      | 3.0  | 3.0  |      | 3.0   | 3.0  |      | 3.0   | 3.0  |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |      | 962  | 855  |      | 970   | 855  |      | 461   | 428  |      | 458  | 428  |
| v/s Ratio Prot         |      |      |      |      |       |      |      |       |      |      |      |      |
| v/s Ratio Perm         |      | 0.21 | 0.07 |      | c0.41 | 0.07 |      | c0.16 | 0.05 |      | 0.13 | 0.01 |
| v/c Ratio              |      | 0.35 | 0.11 |      | 0.69  | 0.11 |      | 0.54  | 0.16 |      | 0.42 | 0.02 |
| Uniform Delay, d1      |      | 8.1  | 6.9  |      | 10.9  | 6.8  |      | 23.4  | 20.6 |      | 22.4 | 19.7 |
| Progression Factor     |      | 1.00 | 1.00 |      | 0.44  | 0.26 |      | 0.83  | 0.69 |      | 1.01 | 0.96 |
| Incremental Delay, d2  |      | 1.0  | 0.3  |      | 3.5   | 0.2  |      | 3.6   | 0.6  |      | 2.7  | 0.1  |
| Delay (s)              |      | 9.1  | 7.1  |      | 8.3   | 2.0  |      | 23.0  | 14.9 |      | 25.4 | 19.1 |
| Level of Service       |      | A    | A    |      | A     | A    |      | C     | B    |      | C    | B    |
| Approach Delay (s)     |      | 8.5  |      |      | 7.3   |      |      | 19.1  |      |      | 24.5 |      |
| Approach LOS           |      | A    |      |      | A     |      |      | B     |      |      | C    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 12.4  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.64  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 89.8% | ICU Level of Service | E   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

# HCM Signalized Intersection Capacity Analysis

6483: L Street & 28th Street

6/1/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|-------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations    |      | ↕     |      |      | ↕    |      |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      | 4.0  |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor      |      | 1.00  |      |      | 1.00 |      |      | 1.00 |      |      | 1.00  |      |
| Frt                    |      | 0.98  |      |      | 0.96 |      |      | 1.00 |      |      | 0.99  |      |
| Flt Protected          |      | 0.99  |      |      | 0.98 |      |      | 0.99 |      |      | 0.99  |      |
| Satd. Flow (prot)      |      | 1612  |      |      | 1575 |      |      | 1660 |      |      | 1638  |      |
| Flt Permitted          |      | 0.81  |      |      | 0.73 |      |      | 0.92 |      |      | 0.80  |      |
| Satd. Flow (perm)      |      | 1329  |      |      | 1166 |      |      | 1536 |      |      | 1328  |      |
| Volume (vph)           | 173  | 309   | 106  | 100  | 98   | 99   | 43   | 249  | 6    | 101  | 242   | 27   |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 173  | 309   | 106  | 100  | 98   | 99   | 43   | 249  | 6    | 101  | 242   | 27   |
| RTOR Reduction (vph)   | 0    | 10    | 0    | 0    | 23   | 0    | 0    | 1    | 0    | 0    | 3     | 0    |
| Lane Group Flow (vph)  | 0    | 578   |      | 0    | 0    | 275  | 0    | 0    | 297  | 0    | 0     | 367  |
| Parking (#/hr)         | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Turn Type              | Perm |       |      | Perm |      |      | Perm |      |      | Perm |       |      |
| Protected Phases       |      | 2     |      |      | 6    |      |      | 3    |      |      | 7     |      |
| Permitted Phases       | 2    |       |      | 6    |      |      | 3    |      | 3    | 7    |       |      |
| Actuated Green, G (s)  |      | 45.0  |      |      | 45.0 |      |      | 29.0 |      |      | 29.0  |      |
| Effective Green, g (s) |      | 44.0  |      |      | 44.0 |      |      | 28.0 |      |      | 28.0  |      |
| Actuated g/C Ratio     |      | 0.55  |      |      | 0.55 |      |      | 0.35 |      |      | 0.35  |      |
| Clearance Time (s)     |      | 3.0   |      |      | 3.0  |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)     |      | 731   |      |      | 641  |      |      | 538  |      |      | 465   |      |
| v/s Ratio Prot         |      |       |      |      |      |      |      |      |      |      |       |      |
| v/s Ratio Perm         |      | c0.44 |      |      | 0.24 |      |      | 0.19 |      |      | c0.28 |      |
| v/c Ratio              |      | 0.79  |      |      | 0.43 |      |      | 0.55 |      |      | 0.79  |      |
| Uniform Delay, d1      |      | 14.3  |      |      | 10.6 |      |      | 21.0 |      |      | 23.3  |      |
| Progression Factor     |      | 1.00  |      |      | 0.68 |      |      | 0.96 |      |      | 0.66  |      |
| Incremental Delay, d2  |      | 8.5   |      |      | 1.8  |      |      | 3.5  |      |      | 12.3  |      |
| Delay (s)              |      | 22.9  |      |      | 8.9  |      |      | 23.5 |      |      | 27.7  |      |
| Level of Service       |      | C     |      |      | A    |      |      | C    |      |      | C     |      |
| Approach Delay (s)     |      | 22.9  |      |      | 8.9  |      |      | 23.5 |      |      | 27.7  |      |
| Approach LOS           |      | C     |      |      | A    |      |      | C    |      |      | C     |      |

## Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 21.5  | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 0.79  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 82.0% | ICU Level of Service | E   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

# HCM Signalized Intersection Capacity Analysis

6484: Capitol & 28th Street

6/1/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|-------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations    |      | ↕     |      |      | ↕    |      |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      | 4.0   |      |      | 4.0  |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor      |      | 1.00  |      |      | 0.95 |      |      | 1.00 |      |      | 1.00  |      |
| Frt                    |      | 0.95  |      |      | 0.99 |      |      | 0.94 |      |      | 0.99  |      |
| Flt Protected          |      | 1.00  |      |      | 1.00 |      |      | 0.99 |      |      | 0.98  |      |
| Satd. Flow (prot)      |      | 1587  |      |      | 3319 |      |      | 1556 |      |      | 1639  |      |
| Flt Permitted          |      | 0.99  |      |      | 0.83 |      |      | 0.85 |      |      | 0.70  |      |
| Satd. Flow (perm)      |      | 1567  |      |      | 2753 |      |      | 1327 |      |      | 1160  |      |
| Volume (vph)           | 11   | 366   | 238  | 63   | 633  | 42   | 94   | 168  | 230  | 149  | 295   | 24   |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 11   | 366   | 238  | 63   | 633  | 42   | 94   | 168  | 230  | 149  | 295   | 24   |
| RTOR Reduction (vph)   | 0    | 28    | 0    | 0    | 5    | 0    | 0    | 39   | 0    | 0    | 3     | 0    |
| Lane Group Flow (vph)  | 0    | 587   |      | 0    | 733  |      | 0    | 453  |      | 0    | 465   |      |
| Parking (#/hr)         | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Turn Type              | Perm |       |      | Perm |      |      | Perm |      |      | Perm |       |      |
| Protected Phases       |      | 4     |      |      | 8    |      |      | 2    |      |      | 6     |      |
| Permitted Phases       | 4    |       |      | 8    |      |      | 2    |      |      | 6    |       |      |
| Actuated Green, G (s)  |      | 35.0  |      |      | 35.0 |      |      | 39.0 |      |      | 39.0  |      |
| Effective Green, g (s) |      | 34.0  |      |      | 34.0 |      |      | 38.0 |      |      | 38.0  |      |
| Actuated g/C Ratio     |      | 0.42  |      |      | 0.42 |      |      | 0.48 |      |      | 0.48  |      |
| Clearance Time (s)     |      | 3.0   |      |      | 3.0  |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)     |      | 666   |      |      | 1170 |      |      | 630  |      |      | 551   |      |
| v/s Ratio Prot         |      |       |      |      |      |      |      |      |      |      |       |      |
| v/s Ratio Perm         |      | c0.37 |      |      | 0.27 |      |      | 0.34 |      |      | c0.40 |      |
| v/c Ratio              |      | 0.88  |      |      | 0.63 |      |      | 0.72 |      |      | 0.84  |      |
| Uniform Delay, d1      |      | 21.1  |      |      | 18.0 |      |      | 16.7 |      |      | 18.4  |      |
| Progression Factor     |      | 1.00  |      |      | 0.45 |      |      | 0.86 |      |      | 0.67  |      |
| Incremental Delay, d2  |      | 15.5  |      |      | 2.4  |      |      | 6.0  |      |      | 11.0  |      |
| Delay (s)              |      | 36.7  |      |      | 10.5 |      |      | 20.4 |      |      | 23.4  |      |
| Level of Service       |      | D     |      |      | B    |      |      | C    |      |      | C     |      |
| Approach Delay (s)     |      | 36.7  |      |      | 10.5 |      |      | 20.4 |      |      | 23.4  |      |
| Approach LOS           |      | D     |      |      | B    |      |      | C    |      |      | C     |      |

## Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 22.2  | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 0.86  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 99.2% | ICU Level of Service | F   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

# HCM Signalized Intersection Capacity Analysis

6485: N Street & 28th Street

6/1/2005



| Movement                  | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|---------------------------|------|------|------|------|-------|------|------|------|------|------|-------|------|
| Lane Configurations       |      | ↕    |      |      | ↕     |      |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)        | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)       |      | 4.0  |      |      | 4.0   |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor         |      | 1.00 |      |      | 1.00  |      |      | 1.00 |      |      | 1.00  |      |
| Fr <sub>t</sub>           |      | 0.99 |      |      | 0.98  |      |      | 0.96 |      |      | 1.00  |      |
| Fl <sub>t</sub> Protected |      | 0.99 |      |      | 1.00  |      |      | 1.00 |      |      | 0.96  |      |
| Satd. Flow (prot)         |      | 1640 |      |      | 1636  |      |      | 1608 |      |      | 1607  |      |
| Fl <sub>t</sub> Permitted |      | 0.58 |      |      | 0.97  |      |      | 0.99 |      |      | 0.64  |      |
| Satd. Flow (perm)         |      | 964  |      |      | 1595  |      |      | 1589 |      |      | 1063  |      |
| Volume (vph)              | 89   | 229  | 23   | 36   | 603   | 122  | 6    | 145  | 63   | 489  | 121   | 20   |
| Peak-hour factor, PHF     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)           | 89   | 229  | 23   | 36   | 603   | 122  | 6    | 145  | 63   | 489  | 121   | 20   |
| RTOR Reduction (vph)      | 0    | 3    | 0    | 0    | 8     | 0    | 0    | 19   | 0    | 0    | 2     | 0    |
| Lane Group Flow (vph)     | 0    | 338  | 0    | 0    | 753   | 0    | 0    | 195  | 0    | 0    | 629   | 0    |
| Parking (#/hr)            | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Turn Type                 | Perm |      |      | Perm |       |      | Perm |      |      | Perm |       |      |
| Protected Phases          |      | 2    |      |      | 6     |      |      | 8    |      |      | 4     |      |
| Permitted Phases          | 2    |      |      | 6    |       |      | 8    |      |      | 4    |       | 4    |
| Actuated Green, G (s)     |      | 33.0 |      |      | 33.0  |      |      | 41.0 |      |      | 41.0  |      |
| Effective Green, g (s)    |      | 32.0 |      |      | 32.0  |      |      | 40.0 |      |      | 40.0  |      |
| Actuated g/C Ratio        |      | 0.40 |      |      | 0.40  |      |      | 0.50 |      |      | 0.50  |      |
| Clearance Time (s)        |      | 3.0  |      |      | 3.0   |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)        |      | 386  |      |      | 638   |      |      | 795  |      |      | 532   |      |
| v/s Ratio Prot            |      |      |      |      |       |      |      |      |      |      |       |      |
| v/s Ratio Perm            |      | 0.35 |      |      | c0.47 |      |      | 0.12 |      |      | c0.59 |      |
| v/c Ratio                 |      | 0.88 |      |      | 1.18  |      |      | 0.25 |      |      | 1.18  |      |
| Uniform Delay, d1         |      | 22.2 |      |      | 24.0  |      |      | 11.4 |      |      | 20.0  |      |
| Progression Factor        |      | 1.00 |      |      | 0.42  |      |      | 1.00 |      |      | 0.89  |      |
| Incremental Delay, d2     |      | 23.2 |      |      | 82.5  |      |      | 0.7  |      |      | 92.9  |      |
| Delay (s)                 |      | 45.4 |      |      | 92.5  |      |      | 12.1 |      |      | 110.6 |      |
| Level of Service          |      | D    |      |      | F     |      |      | B    |      |      | F     |      |
| Approach Delay (s)        |      | 45.4 |      |      | 92.5  |      |      | 12.1 |      |      | 110.6 |      |
| Approach LOS              |      | D    |      |      | F     |      |      | B    |      |      | F     |      |

## Intersection Summary

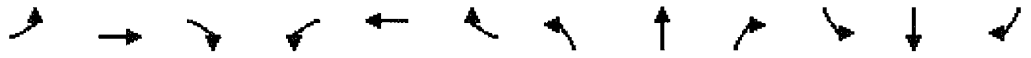
|                                   |        |                      |     |
|-----------------------------------|--------|----------------------|-----|
| HCM Average Control Delay         | 81.3   | HCM Level of Service | F   |
| HCM Volume to Capacity ratio      | 1.18   |                      |     |
| Actuated Cycle Length (s)         | 80.0   | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 107.0% | ICU Level of Service | G   |
| Analysis Period (min)             | 15     |                      |     |
| c Critical Lane Group             |        |                      |     |



# HCM Signalized Intersection Capacity Analysis

6511: K Street & Alhambra

6/1/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|------|-------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations    |      | ↖     | ↗    |      | ↕    |      |      | ↕    |      |      | ↕     |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      | 4.0   | 4.0  |      | 4.0  |      |      | 4.0  |      |      | 4.0   |      |
| Lane Util. Factor      |      | 1.00  | 1.00 |      | 1.00 |      |      | 0.95 |      |      | 0.95  |      |
| Frt                    |      | 1.00  | 0.85 |      | 0.99 |      |      | 0.98 |      |      | 0.96  |      |
| Flt Protected          |      | 0.97  | 1.00 |      | 0.99 |      |      | 0.99 |      |      | 1.00  |      |
| Satd. Flow (prot)      |      | 1801  | 1583 |      | 1816 |      |      | 3424 |      |      | 3411  |      |
| Flt Permitted          |      | 0.72  | 1.00 |      | 0.89 |      |      | 0.60 |      |      | 0.95  |      |
| Satd. Flow (perm)      |      | 1340  | 1583 |      | 1630 |      |      | 2071 |      |      | 3236  |      |
| Volume (vph)           | 183  | 83    | 319  | 39   | 97   | 14   | 111  | 359  | 85   | 12   | 750   | 238  |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 183  | 83    | 319  | 39   | 97   | 14   | 111  | 359  | 85   | 12   | 750   | 238  |
| RTOR Reduction (vph)   | 0    | 0     | 78   | 0    | 5    | 0    | 0    | 18   | 0    | 0    | 37    | 0    |
| Lane Group Flow (vph)  | 0    | 266   | 241  | 0    | 145  | 0    | 0    | 537  | 0    | 0    | 963   | 0    |
| Turn Type              | Perm |       | Perm | Perm |      |      | Perm |      |      | Perm |       |      |
| Protected Phases       |      | 4     |      |      | 8    |      |      | 2    |      |      | 6     |      |
| Permitted Phases       | 4    |       | 4    | 8    |      |      | 2    |      |      | 6    |       |      |
| Actuated Green, G (s)  |      | 35.0  | 35.0 |      | 35.0 |      |      | 39.0 |      |      | 39.0  |      |
| Effective Green, g (s) |      | 34.0  | 34.0 |      | 34.0 |      |      | 38.0 |      |      | 38.0  |      |
| Actuated g/C Ratio     |      | 0.42  | 0.42 |      | 0.42 |      |      | 0.48 |      |      | 0.48  |      |
| Clearance Time (s)     |      | 3.0   | 3.0  |      | 3.0  |      |      | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)     |      | 570   | 673  |      | 693  |      |      | 984  |      |      | 1537  |      |
| v/s Ratio Prot         |      |       |      |      |      |      |      |      |      |      |       |      |
| v/s Ratio Perm         |      | c0.20 | 0.15 |      | 0.09 |      |      | 0.26 |      |      | c0.30 |      |
| v/c Ratio              |      | 0.47  | 0.36 |      | 0.21 |      |      | 0.55 |      |      | 0.63  |      |
| Uniform Delay, d1      |      | 16.5  | 15.6 |      | 14.5 |      |      | 14.9 |      |      | 15.7  |      |
| Progression Factor     |      | 0.82  | 0.76 |      | 1.00 |      |      | 1.04 |      |      | 1.01  |      |
| Incremental Delay, d2  |      | 2.5   | 1.4  |      | 0.7  |      |      | 0.8  |      |      | 1.0   |      |
| Delay (s)              |      | 16.1  | 13.2 |      | 15.2 |      |      | 16.3 |      |      | 16.9  |      |
| Level of Service       |      | B     | B    |      | B    |      |      | B    |      |      | B     |      |
| Approach Delay (s)     |      | 14.5  |      |      | 15.2 |      |      | 16.3 |      |      | 16.9  |      |
| Approach LOS           |      | B     |      |      | B    |      |      | B    |      |      | B     |      |

## Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 16.0  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.55  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 75.7% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

9622: K Street & 30th Street

6/1/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Lane Configurations    | ↖    | ↑    |      |      | ↑     | ↗    |      | ↕    |      |      |      |      |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0  | 4.0  |      |      | 4.0   | 4.0  |      | 4.0  |      |      |      |      |
| Lane Util. Factor      | 1.00 | 1.00 |      |      | 1.00  | 1.00 |      | 0.91 |      |      |      |      |
| Frt                    | 1.00 | 1.00 |      |      | 1.00  | 0.85 |      | 0.97 |      |      |      |      |
| Flt Protected          | 0.95 | 1.00 |      |      | 1.00  | 1.00 |      | 0.99 |      |      |      |      |
| Satd. Flow (prot)      | 1770 | 1863 |      |      | 1863  | 1583 |      | 4891 |      |      |      |      |
| Flt Permitted          | 0.36 | 1.00 |      |      | 1.00  | 1.00 |      | 0.99 |      |      |      |      |
| Satd. Flow (perm)      | 671  | 1863 |      |      | 1863  | 1583 |      | 4891 |      |      |      |      |
| Volume (vph)           | 117  | 340  | 0    | 0    | 480   | 6    | 225  | 706  | 221  | 0    | 0    | 0    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 117  | 340  | 0    | 0    | 480   | 6    | 225  | 706  | 221  | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 0     | 2    | 0    | 49   | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 117  | 340  | 0    | 0    | 480   | 4    | 0    | 1103 | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |      |      | Perm |       |      | Perm |      |      |      |      |      |
| Protected Phases       |      | 4    |      |      | 8     |      |      | 2    |      |      |      |      |
| Permitted Phases       | 4    |      |      |      |       | 8    | 2    |      |      |      |      |      |
| Actuated Green, G (s)  | 41.0 | 41.0 |      |      | 41.0  | 41.0 |      | 33.0 |      |      |      |      |
| Effective Green, g (s) | 40.0 | 40.0 |      |      | 40.0  | 40.0 |      | 32.0 |      |      |      |      |
| Actuated g/C Ratio     | 0.50 | 0.50 |      |      | 0.50  | 0.50 |      | 0.40 |      |      |      |      |
| Clearance Time (s)     | 3.0  | 3.0  |      |      | 3.0   | 3.0  |      | 3.0  |      |      |      |      |
| Lane Grp Cap (vph)     | 336  | 932  |      |      | 932   | 792  |      | 1956 |      |      |      |      |
| v/s Ratio Prot         |      | 0.18 |      |      | c0.26 |      |      |      |      |      |      |      |
| v/s Ratio Perm         | 0.17 |      |      |      |       | 0.00 |      | 0.23 |      |      |      |      |
| v/c Ratio              | 0.35 | 0.36 |      |      | 0.52  | 0.01 |      | 0.56 |      |      |      |      |
| Uniform Delay, d1      | 12.1 | 12.2 |      |      | 13.5  | 10.0 |      | 18.6 |      |      |      |      |
| Progression Factor     | 0.53 | 0.55 |      |      | 1.27  | 1.13 |      | 0.61 |      |      |      |      |
| Incremental Delay, d2  | 2.3  | 0.9  |      |      | 1.8   | 0.0  |      | 1.1  |      |      |      |      |
| Delay (s)              | 8.6  | 7.6  |      |      | 18.9  | 11.3 |      | 12.3 |      |      |      |      |
| Level of Service       | A    | A    |      |      | B     | B    |      | B    |      |      |      |      |
| Approach Delay (s)     |      | 7.8  |      |      | 18.8  |      |      | 12.3 |      |      | 0.0  |      |
| Approach LOS           |      | A    |      |      | B     |      |      | B    |      |      | A    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 12.9  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.54  |                      |     |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 80.3% | ICU Level of Service | D   |
| Analysis Period (min)             | 15    |                      |     |

c Critical Lane Group

EXISTING NO PROJECT WITH SMART PLAN

AM Peak Hour

Unsignalized Intersections

(am1)



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Sutter Medical Center  
EXISTING NO PROJECT  
AM Peak Hour  
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Signal Warrant Summary Report

| Intersection                | Base Met<br>[Del / Vol] | Future Met<br>[Del / Vol] |
|-----------------------------|-------------------------|---------------------------|
| #3434 26th St & N St        |                         |                           |
| #5800 26th St & K St        | No / No                 | ??? / ???                 |
| #6395 27th St & N St        | No / No                 | ??? / ???                 |
| #6396 Capitol Ave & 27th St | No / No                 | ??? / ???                 |
| #6397 27th St & L St        | No / No                 | ??? / ???                 |

Sutter Medical Center  
EXISTING NO PROJECT  
AM Peak Hour

Peak Hour Delay Signal Warrant Report

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Intersection #5800 26th St & K St

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Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:    | North Bound |    |        | South Bound |    |        | East Bound   |     |        | West Bound   |     |        |
|--------------|-------------|----|--------|-------------|----|--------|--------------|-----|--------|--------------|-----|--------|
| Movement:    | L           | T  | R      | L           | T  | R      | L            | T   | R      | L            | T   | R      |
| Control:     | Stop Sign   |    |        | Stop Sign   |    |        | Uncontrolled |     |        | Uncontrolled |     |        |
| Lanes:       | 0           | 0  | 1! 0 0 | 0           | 0  | 1! 0 0 | 0            | 0   | 1! 0 0 | 0            | 0   | 1! 0 0 |
| Final Vol.:  | 15          | 36 | 31     | 2           | 27 | 11     | 13           | 150 | 19     | 15           | 430 | 38     |
| ApproachDel: | 14.5        |    |        | 14.7        |    |        | xxxxxxx      |     |        | xxxxxxx      |     |        |

-----|-----|-----|-----|-----|  
Approach[northbound] [lanes=1] [control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.3]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=82]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=4] [total volume=787]  
FAIL - Total volume less than 800 for intersection  
with four or more approaches.

-----|-----|-----|-----|-----|  
Approach[southbound] [lanes=1] [control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.2]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=40]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=4] [total volume=787]  
FAIL - Total volume less than 800 for intersection  
with four or more approaches.

Sutter Medical Center  
EXISTING NO PROJECT  
AM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

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Intersection #5800 26th St & K St

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Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:                        | North Bound |    |        | South Bound |    |        | East Bound   |     |        | West Bound   |     |        |
|----------------------------------|-------------|----|--------|-------------|----|--------|--------------|-----|--------|--------------|-----|--------|
| Movement:                        | L           | T  | R      | L           | T  | R      | L            | T   | R      | L            | T   | R      |
| Control:                         | Stop Sign   |    |        | Stop Sign   |    |        | Uncontrolled |     |        | Uncontrolled |     |        |
| Lanes:                           | 0           | 0  | 1! 0 0 | 0           | 0  | 1! 0 0 | 0            | 0   | 1! 0 0 | 0            | 0   | 1! 0 0 |
| Final Vol.:                      | 15          | 36 | 31     | 2           | 27 | 11     | 13           | 150 | 19     | 15           | 430 | 38     |
| Major Street Volume:             |             |    |        |             |    |        | 665          |     |        |              |     |        |
| Minor Approach Volume:           |             |    |        |             |    |        | 82           |     |        |              |     |        |
| Minor Approach Volume Threshold: |             |    |        |             |    |        | 328          |     |        |              |     |        |

Sutter Medical Center  
EXISTING NO PROJECT  
AM Peak Hour

Peak Hour Delay Signal Warrant Report

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Intersection #6395 27th St & N St

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Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:    | North Bound |    |    |   |   | South Bound |   |   |   |   | East Bound   |     |   |   |   | West Bound   |   |   |   |   |   |   |   |   |   |
|--------------|-------------|----|----|---|---|-------------|---|---|---|---|--------------|-----|---|---|---|--------------|---|---|---|---|---|---|---|---|---|
| Movement:    | L           | T  | R  | L | R | L           | T | R | L | R | L            | T   | R | L | T | R            | L | T | R | L | T | R |   |   |   |
| Control:     | Stop Sign   |    |    |   |   | Stop Sign   |   |   |   |   | Uncontrolled |     |   |   |   | Uncontrolled |   |   |   |   |   |   |   |   |   |
| Lanes:       | 0           | 0  | 0  | 1 | 0 | 0           | 1 | 0 | 0 | 0 | 0            | 1   | 1 | 1 | 0 | 0            | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Final Vol.:  | 0           | 14 | 19 |   |   | 8           | 4 | 0 |   |   | 13           | 327 | 4 |   |   | 0            | 0 | 0 |   |   | 0 | 0 | 0 |   |   |
| ApproachDel: | 10.1        |    |    |   |   | 10.3        |   |   |   |   | xxxxxxx      |     |   |   |   | xxxxxxx      |   |   |   |   |   |   |   |   |   |

Approach[northbound][lanes=1][control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.1]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=33]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=3][total volume=389]  
FAIL - Total volume less than 650 for intersection  
with less than four approaches.

Approach[southbound][lanes=1][control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.0]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=12]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=3][total volume=389]  
FAIL - Total volume less than 650 for intersection  
with less than four approaches.



Sutter Medical Center  
EXISTING NO PROJECT  
AM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

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Intersection #6395 27th St & N St

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Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:   | North Bound |   |    |   |    | South Bound |   |   |   |   | East Bound   |   |     |   |   | West Bound   |   |   |   |   |
|-------------|-------------|---|----|---|----|-------------|---|---|---|---|--------------|---|-----|---|---|--------------|---|---|---|---|
| Movement:   | L           | - | T  | - | R  | L           | - | T | - | R | L            | - | T   | - | R | L            | - | T | - | R |
| Control:    | Stop Sign   |   |    |   |    | Stop Sign   |   |   |   |   | Uncontrolled |   |     |   |   | Uncontrolled |   |   |   |   |
| Lanes:      | 0           | 0 | 0  | 1 | 0  | 0           | 1 | 0 | 0 | 0 | 0            | 1 | 1   | 1 | 0 | 0            | 0 | 0 | 0 | 0 |
| Final Vol.: | 0           |   | 14 |   | 19 | 8           |   | 4 |   | 0 | 13           |   | 327 |   | 4 | 0            |   | 0 |   | 0 |

Major Street Volume: 344  
Minor Approach Volume: 33  
Minor Approach Volume Threshold: 652

Sutter Medical Center  
EXISTING NO PROJECT  
AM Peak Hour

Peak Hour Delay Signal Warrant Report

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Intersection #6396 Capitol Ave & 27th St

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Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:    | North Bound |    |        | South Bound |   |        | East Bound   |     |        | West Bound   |     |        |
|--------------|-------------|----|--------|-------------|---|--------|--------------|-----|--------|--------------|-----|--------|
| Movement:    | L           | T  | R      | L           | T | R      | L            | T   | R      | L            | T   | R      |
| Control:     | Stop Sign   |    |        | Stop Sign   |   |        | Uncontrolled |     |        | Uncontrolled |     |        |
| Lanes:       | 0           | 0  | 1! 0 0 | 0           | 0 | 1! 0 0 | 0            | 0   | 1! 0 0 | 0            | 0   | 1! 0 0 |
| Final Vol.:  | 4           | 13 | 11     | 27          | 2 | 6      | 9            | 225 | 2      | 13           | 469 | 26     |
| ApproachDel: | 14.0        |    |        | 17.0        |   |        | xxxxxxx      |     |        | xxxxxxx      |     |        |

Approach[northbound][lanes=1][control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.1]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=28]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=4][total volume=807]  
SUCCEED - Total volume greater than or equal to 800 for intersection  
with four or more approaches.

Approach[southbound][lanes=1][control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.2]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=35]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=4][total volume=807]  
SUCCEED - Total volume greater than or equal to 800 for intersection  
with four or more approaches.

Sutter Medical Center  
EXISTING NO PROJECT  
AM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

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Intersection #6396 Capitol Ave & 27th St

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Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:   | North Bound |    |        | South Bound |   |        | East Bound   |     |        | West Bound   |     |        |
|-------------|-------------|----|--------|-------------|---|--------|--------------|-----|--------|--------------|-----|--------|
| Movement:   | L           | T  | R      | L           | T | R      | L            | T   | R      | L            | T   | R      |
| Control:    | Stop Sign   |    |        | Stop Sign   |   |        | Uncontrolled |     |        | Uncontrolled |     |        |
| Lanes:      | 0           | 0  | 1! 0 0 | 0           | 0 | 1! 0 0 | 0            | 0   | 1! 0 0 | 0            | 0   | 1! 0 0 |
| Final Vol.: | 4           | 13 | 11     | 27          | 2 | 6      | 9            | 225 | 2      | 13           | 469 | 26     |

Major Street Volume: 744

Minor Approach Volume: 35

Minor Approach Volume Threshold: 298

Sutter Medical Center  
EXISTING NO PROJECT  
AM Peak Hour

Peak Hour Delay Signal Warrant Report

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Intersection #6397 27th St & L St

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Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:    | North Bound |   |   | South Bound |   |   | East Bound   |   |   | West Bound   |     |   |
|--------------|-------------|---|---|-------------|---|---|--------------|---|---|--------------|-----|---|
| Movement:    | L           | T | R | L           | T | R | L            | T | R | L            | T   | R |
| Control:     | Stop Sign   |   |   | Stop Sign   |   |   | Uncontrolled |   |   | Uncontrolled |     |   |
| Lanes:       | 1           | 0 | 0 | 0           | 0 | 0 | 0            | 0 | 0 | 0            | 1   | 2 |
| Final Vol.:  | 38          | 0 | 0 | 0           | 0 | 0 | 0            | 0 | 0 | 32           | 693 | 0 |
| ApproachDel: | 10.6        |   |   | xxxxxxx     |   |   | xxxxxxx      |   |   | xxxxxxx      |     |   |

Approach[northbound][lanes=1][control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.1]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=38]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=2][total volume=763]  
SUCCEED - Total volume greater than or equal to 650 for intersection  
with less than four approaches.

Sutter Medical Center  
EXISTING NO PROJECT  
AM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

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Intersection #6397 27th St & L St

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Base Volume Alternative: Peak Hour Warrant NOT Met

|             | North Bound |   |   |   | South Bound |   |   |   | East Bound   |   |   |   | West Bound   |     |   |   |
|-------------|-------------|---|---|---|-------------|---|---|---|--------------|---|---|---|--------------|-----|---|---|
| Approach:   |             |   |   |   |             |   |   |   |              |   |   |   |              |     |   |   |
| Movement:   | L           | T | R |   | L           | T | R |   | L            | T | R |   | L            | T   | R |   |
| Control:    | Stop Sign   |   |   |   | Stop Sign   |   |   |   | Uncontrolled |   |   |   | Uncontrolled |     |   |   |
| Lanes:      | 1           | 0 | 0 | 0 | 0           | 0 | 0 | 0 | 0            | 0 | 0 | 0 | 0            | 1   | 2 | 0 |
| Final Vol.: | 38          | 0 | 0 | 0 | 0           | 0 | 0 | 0 | 0            | 0 | 0 | 0 | 32           | 693 | 0 | 0 |

Major Street Volume: 725

Minor Approach Volume: 38

Minor Approach Volume Threshold: 396

Sutter Medical Center  
EXISTING NO PROJECT  
AM Peak Hour

Level Of Service Computation Report  
2000 HCM 4-Way Stop Method (Base Volume Alternative)

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Intersection #3434 26th St & N St  
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.149  
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 8.2  
Optimal Cycle: 0 Level Of Service: A  
\*\*\*\*\*

| Approach:   | North Bound |   |   | South Bound |   |   | East Bound |   |   | West Bound |   |   |
|-------------|-------------|---|---|-------------|---|---|------------|---|---|------------|---|---|
| Movement:   | L           | T | R | L           | T | R | L          | T | R | L          | T | R |
| Control:    | Stop Sign   |   |   | Stop Sign   |   |   | Stop Sign  |   |   | Stop Sign  |   |   |
| Rights:     | Include     |   |   | Include     |   |   | Include    |   |   | Include    |   |   |
| Min. Green: | 0           | 0 | 0 | 0           | 0 | 0 | 0          | 0 | 0 | 0          | 0 | 0 |
| Lanes:      | 0           | 0 | 1 | 0           | 1 | 0 | 0          | 1 | 1 | 0          | 0 | 0 |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 0    | 51   | 20   | 11   | 18   | 0    | 19   | 304  | 7    | 0    | 0    | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0    | 51   | 20   | 11   | 18   | 0    | 19   | 304  | 7    | 0    | 0    | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 0    | 51   | 20   | 11   | 18   | 0    | 19   | 304  | 7    | 0    | 0    | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 0    | 51   | 20   | 11   | 18   | 0    | 19   | 304  | 7    | 0    | 0    | 0    |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Final Vol.:  | 0    | 51   | 20   | 11   | 18   | 0    | 19   | 304  | 7    | 0    | 0    | 0    |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 0.00 | 0.72 | 0.28 | 0.38 | 0.62 | 0.00 | 0.17 | 2.77 | 0.06 | 0.00 | 0.00 | 0.00 |
| Final Sat.: | 0    | 555  | 218  | 275  | 450  | 0    | 128  | 2077 | 48   | 0    | 0    | 0    |

Capacity Analysis Module:

|              |      |      |      |      |      |      |      |      |      |         |      |      |
|--------------|------|------|------|------|------|------|------|------|------|---------|------|------|
| Vol/Sat:     | xxxx | 0.09 | 0.09 | 0.04 | 0.04 | xxxx | 0.15 | 0.15 | 0.14 | xxxx    | xxxx | xxxx |
| Crit Moves:  | **** |      |      | **** |      |      | **** |      |      | xxxxxx  |      |      |
| Delay/Veh:   | 0.0  | 7.9  | 7.9  | 7.9  | 7.9  | 0.0  | 8.3  | 8.2  | 8.2  | 0.0     | 0.0  | 0.0  |
| Delay Adj:   | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00    | 1.00 | 1.00 |
| AdjDel/Veh:  | 0.0  | 7.9  | 7.9  | 7.9  | 7.9  | 0.0  | 8.3  | 8.2  | 8.2  | 0.0     | 0.0  | 0.0  |
| LOS by Move: | *    | A    | A    | A    | A    | *    | A    | A    | A    | *       | *    | *    |
| ApproachDel: | 7.9  |      |      | 7.9  |      |      | 8.2  |      |      | xxxxxxx |      |      |
| Delay Adj:   | 1.00 |      |      | 1.00 |      |      | 1.00 |      |      | xxxxxxx |      |      |
| ApprAdjDel:  | 7.9  |      |      | 7.9  |      |      | 8.2  |      |      | xxxxxxx |      |      |
| LOS by Appr: | A    |      |      | A    |      |      | A    |      |      | *       |      |      |

\*\*\*\*\*

Sutter Medical Center  
EXISTING NO PROJECT  
AM Peak Hour

Level Of Service Computation Report  
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*  
Intersection #5800 26th St & K St  
\*\*\*\*\*

Average Delay (sec/veh): 2.5 Worst Case Level Of Service: B[ 14.7]

| Approach: | North Bound |   |        | South Bound |   |        | East Bound   |   |        | West Bound   |   |        |
|-----------|-------------|---|--------|-------------|---|--------|--------------|---|--------|--------------|---|--------|
| Movement: | L           | T | R      | L           | T | R      | L            | T | R      | L            | T | R      |
| Control:  | Stop Sign   |   |        | Stop Sign   |   |        | Uncontrolled |   |        | Uncontrolled |   |        |
| Rights:   | Include     |   |        | Include     |   |        | Include      |   |        | Include      |   |        |
| Lanes:    | 0           | 0 | 1! 0 0 | 0           | 0 | 1! 0 0 | 0            | 0 | 1! 0 0 | 0            | 0 | 1! 0 0 |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 15   | 36   | 31   | 2    | 27   | 11   | 13   | 150  | 19   | 15   | 430  | 38   |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 15   | 36   | 31   | 2    | 27   | 11   | 13   | 150  | 19   | 15   | 430  | 38   |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 15   | 36   | 31   | 2    | 27   | 11   | 13   | 150  | 19   | 15   | 430  | 38   |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Final Vol.:  | 15   | 36   | 31   | 2    | 27   | 11   | 13   | 150  | 19   | 15   | 430  | 38   |

Critical Gap Module:

|              |     |     |     |     |     |     |     |      |       |     |      |       |
|--------------|-----|-----|-----|-----|-----|-----|-----|------|-------|-----|------|-------|
| Critical Gp: | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | xxxx | xxxxx | 4.1 | xxxx | xxxxx |
| FollowUpTim: | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | xxxx | xxxxx | 2.2 | xxxx | xxxxx |

Capacity Module:

|              |      |      |      |      |      |      |      |      |       |      |      |       |
|--------------|------|------|------|------|------|------|------|------|-------|------|------|-------|
| Cnflct Vol:  | 684  | 684  | 160  | 698  | 674  | 449  | 468  | xxxx | xxxxx | 169  | xxxx | xxxxx |
| Potent Cap.: | 366  | 374  | 891  | 358  | 379  | 614  | 1104 | xxxx | xxxxx | 1421 | xxxx | xxxxx |
| Move Cap.:   | 333  | 366  | 891  | 314  | 370  | 614  | 1104 | xxxx | xxxxx | 1421 | xxxx | xxxxx |
| Volume/Cap:  | 0.04 | 0.10 | 0.03 | 0.01 | 0.07 | 0.02 | 0.01 | xxxx | xxxxx | 0.01 | xxxx | xxxxx |

Level Of Service Module:

|              |               |               |               |               |               |               |               |               |               |               |               |       |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-------|
| Queue:       | xxxxx         | xxxx          | xxxxx         | xxxxx         | xxxx          | xxxxx         | 0.0           | xxxx          | xxxxx         | 0.0           | xxxx          | xxxxx |
| Stopped Del: | xxxxx         | xxxx          | xxxxx         | xxxxx         | xxxx          | xxxxx         | 8.3           | xxxx          | xxxxx         | 7.6           | xxxx          | xxxxx |
| LOS by Move: | *             | *             | *             | *             | *             | *             | A             | *             | *             | A             | *             | *     |
| Movement:    | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT |       |
| Shared Cap.: | xxxx          | 460           | xxxxx         | xxxx          | 411           | xxxxx         | xxxx          | xxxx          | xxxxx         | xxxx          | xxxx          | xxxxx |
| SharedQueue: | xxxxx         | 0.6           | xxxxx         | xxxxx         | 0.3           | xxxxx         | xxxxx         | xxxx          | xxxxx         | xxxxx         | xxxx          | xxxxx |
| Shrd StpDel: | xxxxx         | 14.5          | xxxxx         | xxxxx         | 14.7          | xxxxx         | xxxxx         | xxxx          | xxxxx         | xxxxx         | xxxx          | xxxxx |
| Shared LOS:  | *             | B             | *             | *             | B             | *             | *             | *             | *             | *             | *             | *     |
| ApproachDel: | 14.5          |               |               | 14.7          |               |               | xxxxxx        |               |               | xxxxxx        |               |       |
| ApproachLOS: | B             |               |               | B             |               |               | *             |               |               | *             |               |       |

Sutter Medical Center  
EXISTING NO PROJECT  
AM Peak Hour

Level Of Service Computation Report  
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*  
Intersection #6395 27th St & N St  
\*\*\*\*\*

Average Delay (sec/veh): 1.5 Worst Case Level Of Service: B[ 10.3]

| Approach: | North Bound |   |   | South Bound |   |   | East Bound   |   |   | West Bound   |   |   |
|-----------|-------------|---|---|-------------|---|---|--------------|---|---|--------------|---|---|
| Movement: | L           | T | R | L           | T | R | L            | T | R | L            | T | R |
| Control:  | Stop Sign   |   |   | Stop Sign   |   |   | Uncontrolled |   |   | Uncontrolled |   |   |
| Rights:   | Include     |   |   | Include     |   |   | Include      |   |   | Include      |   |   |
| Lanes:    | 0           | 0 | 0 | 1           | 0 | 0 | 0            | 1 | 1 | 1            | 0 | 0 |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 0    | 14   | 19   | 8    | 4    | 0    | 13   | 327  | 4    | 0    | 0    | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0    | 14   | 19   | 8    | 4    | 0    | 13   | 327  | 4    | 0    | 0    | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 0    | 14   | 19   | 8    | 4    | 0    | 13   | 327  | 4    | 0    | 0    | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Final Vol.:  | 0    | 14   | 19   | 8    | 4    | 0    | 13   | 327  | 4    | 0    | 0    | 0    |

Critical Gap Module:

|              |       |     |     |     |     |       |     |       |       |       |       |       |
|--------------|-------|-----|-----|-----|-----|-------|-----|-------|-------|-------|-------|-------|
| Critical Gp: | xxxxx | 6.5 | 6.2 | 7.1 | 6.5 | xxxxx | 4.1 | xxxxx | xxxxx | xxxxx | xxxxx | xxxxx |
| FollowUpTim: | xxxxx | 4.0 | 3.3 | 3.5 | 4.0 | xxxxx | 2.2 | xxxxx | xxxxx | xxxxx | xxxxx | xxxxx |

Capacity Module:

|              |       |      |      |      |      |        |      |       |        |       |       |        |
|--------------|-------|------|------|------|------|--------|------|-------|--------|-------|-------|--------|
| Cnflct Vol:  | xxxxx | 355  | 111  | 142  | 357  | xxxxxx | 0    | xxxxx | xxxxxx | xxxxx | xxxxx | xxxxxx |
| Potent Cap.: | xxxxx | 574  | 948  | 832  | 572  | xxxxxx | 900  | xxxxx | xxxxxx | xxxxx | xxxxx | xxxxxx |
| Move Cap.:   | xxxxx | 565  | 948  | 791  | 564  | xxxxxx | 900  | xxxxx | xxxxxx | xxxxx | xxxxx | xxxxxx |
| Volume/Cap:  | xxxxx | 0.02 | 0.02 | 0.01 | 0.01 | xxxxx  | 0.01 | xxxxx | xxxxx  | xxxxx | xxxxx | xxxxx  |

Level Of Service Module:

|              |        |       |        |        |       |        |         |       |        |         |       |        |     |
|--------------|--------|-------|--------|--------|-------|--------|---------|-------|--------|---------|-------|--------|-----|
| Queue:       | xxxxxx | xxxx  | xxxxxx | xxxxxx | xxxx  | xxxxxx | 0.0     | xxxxx | xxxxxx | xxxxxx  | xxxx  | xxxxxx |     |
| Stopped Del: | xxxxxx | xxxx  | xxxxxx | xxxxxx | xxxx  | xxxxxx | 9.1     | xxxxx | xxxxxx | xxxxxx  | xxxx  | xxxxxx |     |
| LOS by Move: | *      | *     | *      | *      | *     | *      | A       | *     | *      | *       | *     | *      |     |
| Movement:    | LT     | -     | LTR    | -      | RT    | LT     | -       | LTR   | -      | RT      | LT    | -      | LTR |
| Shared Cap.: | xxxxx  | xxxxx | 736    | 698    | xxxxx | xxxxxx | xxxxx   | xxxxx | xxxxxx | xxxxx   | xxxxx | xxxxxx |     |
| SharedQueue: | xxxxxx | xxxx  | 0.1    | 0.1    | xxxxx | xxxxxx | 0.0     | xxxxx | xxxxxx | xxxxxx  | xxxx  | xxxxxx |     |
| Shrd StpDel: | xxxxxx | xxxx  | 10.1   | 10.3   | xxxxx | xxxxxx | 9.1     | xxxxx | xxxxxx | xxxxxx  | xxxx  | xxxxxx |     |
| Shared LOS:  | *      | *     | B      | B      | *     | *      | A       | *     | *      | *       | *     | *      |     |
| ApproachDel: | 10.1   |       |        | 10.3   |       |        | xxxxxxx |       |        | xxxxxxx |       |        |     |
| ApproachLOS: | B      |       |        | B      |       |        | *       |       |        | *       |       |        |     |



Sutter Medical Center
EXISTING NO PROJECT
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #6396 Capitol Ave & 27th St
\*\*\*\*\*

Average Delay (sec/veh): 1.4 Worst Case Level Of Service: C [ 17.0]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns for traffic volumes and adjustments (Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Vol).

Critical Gap Module: Table with 13 columns for critical gaps and follow-up times.

Capacity Module: Table with 13 columns for conflict volumes, potential capacity, move capacity, and volume/capacity ratios.

Level Of Service Module: Table with 13 columns for queue lengths, stopped delays, LOS by movement, shared capacity, shared queue, shared stop delays, and approach delays/LOS.

Sutter Medical Center  
EXISTING NO PROJECT  
AM Peak Hour

Level Of Service Computation Report  
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*  
Intersection #6397 27th St & L St  
\*\*\*\*\*

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: B [ 10.6 ]  
\*\*\*\*\*

| Approach: | North Bound |   |   | South Bound |   |   | East Bound   |   |   | West Bound   |   |   |
|-----------|-------------|---|---|-------------|---|---|--------------|---|---|--------------|---|---|
| Movement: | L           | T | R | L           | T | R | L            | T | R | L            | T | R |
| Control:  | Stop Sign   |   |   | Stop Sign   |   |   | Uncontrolled |   |   | Uncontrolled |   |   |
| Rights:   | Include     |   |   | Include     |   |   | Include      |   |   | Include      |   |   |
| Lanes:    | 1           | 0 | 0 | 0           | 0 | 0 | 0            | 0 | 0 | 0            | 1 | 2 |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 38   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 32   | 693  | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 38   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 32   | 693  | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 38   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 32   | 693  | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Final Vol.:  | 38   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 32   | 693  | 0    |

Critical Gap Module:

|              |     |      |       |       |      |       |       |      |       |     |      |       |
|--------------|-----|------|-------|-------|------|-------|-------|------|-------|-----|------|-------|
| Critical Gp: | 6.4 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | 4.1 | xxxx | xxxxx |
| FollowUpTim: | 3.5 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | 2.2 | xxxx | xxxxx |

Capacity Module:

|              |      |      |       |       |      |       |       |      |       |      |      |       |
|--------------|------|------|-------|-------|------|-------|-------|------|-------|------|------|-------|
| Cnflct Vol:  | 295  | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | 0    | xxxx | xxxxx |
| Potent Cap.: | 700  | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | 900  | xxxx | xxxxx |
| Move Cap.:   | 681  | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | 900  | xxxx | xxxxx |
| Volume/Cap:  | 0.06 | xxxx | xxxx  | xxxxx | xxxx | xxxx  | xxxxx | xxxx | xxxx  | 0.04 | xxxx | xxxx  |

Level Of Service Module:

|              |       |      |       |         |      |       |         |      |       |         |      |       |
|--------------|-------|------|-------|---------|------|-------|---------|------|-------|---------|------|-------|
| Queue:       | 0.2   | xxxx | xxxxx | xxxxx   | xxxx | xxxxx | xxxxx   | xxxx | xxxxx | 0.1     | xxxx | xxxxx |
| Stopped Del: | 10.6  | xxxx | xxxxx | xxxxx   | xxxx | xxxxx | xxxxx   | xxxx | xxxxx | 9.1     | xxxx | xxxxx |
| LOS by Move: | B     | *    | *     | *       | *    | *     | *       | *    | *     | A       | *    | *     |
| Movement:    | LT    | LTR  | RT    | LT      | LTR  | RT    | LT      | LTR  | RT    | LT      | LTR  | RT    |
| Shared Cap.: | xxxx  | xxxx | xxxxx | xxxxx   | xxxx | xxxxx | xxxxx   | xxxx | xxxxx | xxxxx   | xxxx | xxxxx |
| SharedQueue: | xxxxx | xxxx | xxxxx | xxxxx   | xxxx | xxxxx | xxxxx   | xxxx | xxxxx | 0.1     | xxxx | xxxxx |
| Shrd StpDel: | xxxxx | xxxx | xxxxx | xxxxx   | xxxx | xxxxx | xxxxx   | xxxx | xxxxx | 9.1     | xxxx | xxxxx |
| Shared LOS:  | *     | *    | *     | *       | *    | *     | *       | *    | *     | A       | *    | *     |
| ApproachDel: | 10.6  |      |       | xxxxxxx |      |       | xxxxxxx |      |       | xxxxxxx |      |       |
| ApproachLOS: | B     |      |       | *       |      |       | *       |      |       | *       |      |       |

EXISTING NO PROJECT WITH SMART PLAN

PM Peak Hour

Unsignalized Intersections

(pm1)



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Sutter Medical Center  
EXISTING NO PROJECT  
PM Peak Hour  
-----

Signal Warrant Summary Report

| Intersection                | Base Met<br>[Del / Vol] | Future Met<br>[Del / Vol] |
|-----------------------------|-------------------------|---------------------------|
| #3434 26th St & N St        |                         |                           |
| #5800 26th St & K St        | No / No                 | ??? / ???                 |
| #6395 27th St & N St        | No / No                 | ??? / ???                 |
| #6396 Capitol Ave & 27th St | No / No                 | ??? / ???                 |
| #6397 27th St & L St        | No / No                 | ??? / ???                 |

Sutter Medical Center  
EXISTING NO PROJECT  
PM Peak Hour

Peak Hour Delay Signal Warrant Report

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Intersection #5800 26th St & K St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:    | North Bound |    |        | South Bound |    |        | East Bound   |     |        | West Bound   |     |        |
|--------------|-------------|----|--------|-------------|----|--------|--------------|-----|--------|--------------|-----|--------|
| Movement:    | L           | T  | R      | L           | T  | R      | L            | T   | R      | L            | T   | R      |
| Control:     | Stop Sign   |    |        | Stop Sign   |    |        | Uncontrolled |     |        | Uncontrolled |     |        |
| Lanes:       | 0           | 0  | 1! 0 0 | 0           | 0  | 1! 0 0 | 0            | 0   | 1! 0 0 | 0            | 0   | 1! 0 0 |
| Final Vol.:  | 5           | 61 | 28     | 6           | 40 | 27     | 14           | 326 | 19     | 27           | 477 | 30     |
| ApproachDel: | 21.1        |    |        | 19.8        |    |        | xxxxxxx      |     |        | xxxxxxx      |     |        |

Approach[northbound][lanes=1][control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.6]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=94]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=4][total volume=1060]  
SUCCEED - Total volume greater than or equal to 800 for intersection  
with four or more approaches.

Approach[southbound][lanes=1][control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.4]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=73]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=4][total volume=1060]  
SUCCEED - Total volume greater than or equal to 800 for intersection  
with four or more approaches.

-----  
 Sutter Medical Center  
 EXISTING NO PROJECT  
 PM Peak Hour  
 -----

-----  
 Peak Hour Volume Signal Warrant Report [Urban]  
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Intersection #5800 26th St & K St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:   | North Bound |    |        | South Bound |    |        | East Bound   |     |        | West Bound   |     |        |
|-------------|-------------|----|--------|-------------|----|--------|--------------|-----|--------|--------------|-----|--------|
| Movement:   | L           | T  | R      | L           | T  | R      | L            | T   | R      | L            | T   | R      |
| Control:    | Stop Sign   |    |        | Stop Sign   |    |        | Uncontrolled |     |        | Uncontrolled |     |        |
| Lanes:      | 0           | 0  | 1! 0 0 | 0           | 0  | 1! 0 0 | 0            | 0   | 1! 0 0 | 0            | 0   | 1! 0 0 |
| Final Vol.: | 5           | 61 | 28     | 6           | 40 | 27     | 14           | 326 | 19     | 27           | 477 | 30     |

Major Street Volume: 893  
 Minor Approach Volume: 94  
 Minor Approach Volume Threshold: 250

Sutter Medical Center  
EXISTING NO PROJECT  
PM Peak Hour

Peak Hour Delay Signal Warrant Report

\*\*\*\*\*  
Intersection #6395 27th St & N St  
\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:    | North Bound |    |    | South Bound |   |   | East Bound   |   |    | West Bound   |    |   |   |   |   |   |   |   |   |
|--------------|-------------|----|----|-------------|---|---|--------------|---|----|--------------|----|---|---|---|---|---|---|---|---|
| Movement:    | L           | T  | R  | L           | T | R | L            | T | R  | L            | T  | R |   |   |   |   |   |   |   |
| Control:     | Stop Sign   |    |    | Stop Sign   |   |   | Uncontrolled |   |    | Uncontrolled |    |   |   |   |   |   |   |   |   |
| Lanes:       | 0           | 0  | 1  | 0           | 0 | 1 | 0            | 0 | 0  | 0            | 1  | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Final Vol.:  | 0           | 20 | 17 | 12          | 8 | 0 | 0            | 0 | 16 | 767          | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |   |
| ApproachDel: | 14.6        |    |    | 14.5        |   |   | xxxxxxx      |   |    | xxxxxxx      |    |   |   |   |   |   |   |   |   |

Approach[northbound] [lanes=1] [control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.2]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=37]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=3] [total volume=860]  
SUCCEED - Total volume greater than or equal to 650 for intersection  
with less than four approaches.

Approach[southbound] [lanes=1] [control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.1]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=20]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=3] [total volume=860]  
SUCCEED - Total volume greater than or equal to 650 for intersection  
with less than four approaches.



Sutter Medical Center  
EXISTING NO PROJECT  
PM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

\*\*\*\*\*

Intersection #6395 27th St & N St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:   | North Bound |    |    |   | South Bound |   |   |   | East Bound   |     |    |   | West Bound   |   |   |   |   |   |   |   |
|-------------|-------------|----|----|---|-------------|---|---|---|--------------|-----|----|---|--------------|---|---|---|---|---|---|---|
| Movement:   | L           | T  | R  |   | L           | T | R |   | L            | T   | R  |   | L            | T | R |   |   |   |   |   |
| Control:    | Stop Sign   |    |    |   | Stop Sign   |   |   |   | Uncontrolled |     |    |   | Uncontrolled |   |   |   |   |   |   |   |
| Lanes:      | 0           | 0  | 0  | 1 | 0           | 0 | 1 | 0 | 0            | 0   | 0  | 1 | 0            | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Final Vol.: | 0           | 20 | 17 |   | 12          | 8 | 0 |   | 16           | 767 | 20 |   | 0            | 0 | 0 |   |   |   |   |   |

Major Street Volume: 803  
Minor Approach Volume: 37  
Minor Approach Volume Threshold: 360

Sutter Medical Center  
EXISTING NO PROJECT  
PM Peak Hour

Peak Hour Delay Signal Warrant Report

\*\*\*\*\*

Intersection #6396 Capitol Ave & 27th St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:    | North Bound |    |      | South Bound |   |      | East Bound   |     |      | West Bound   |     |      |
|--------------|-------------|----|------|-------------|---|------|--------------|-----|------|--------------|-----|------|
| Movement:    | L           | T  | R    | L           | T | R    | L            | T   | R    | L            | T   | R    |
| Control:     | Stop Sign   |    |      | Stop Sign   |   |      | Uncontrolled |     |      | Uncontrolled |     |      |
| Lanes:       | 0           | 0  | 1! 0 | 0           | 0 | 1! 0 | 0            | 0   | 1! 0 | 0            | 0   | 1! 0 |
| Final Vol.:  | 8           | 11 | 25   | 26          | 7 | 5    | 6            | 423 | 6    | 11           | 439 | 5    |
| ApproachDel: | 15.3        |    |      | 21.0        |   |      | xxxxxxx      |     |      | xxxxxxx      |     |      |

Approach[northbound][lanes=1][control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.2]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=44]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=4][total volume=972]  
SUCCEED - Total volume greater than or equal to 800 for intersection  
with four or more approaches.

Approach[southbound][lanes=1][control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.2]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=38]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=4][total volume=972]  
SUCCEED - Total volume greater than or equal to 800 for intersection  
with four or more approaches.

Sutter Medical Center  
EXISTING NO PROJECT  
PM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

\*\*\*\*\*

Intersection #6396 Capitol Ave & 27th St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:   | North Bound |    |        | South Bound |   |        | East Bound   |     |        | West Bound   |     |        |
|-------------|-------------|----|--------|-------------|---|--------|--------------|-----|--------|--------------|-----|--------|
| Movement:   | L           | T  | R      | L           | T | R      | L            | T   | R      | L            | T   | R      |
| Control:    | Stop Sign   |    |        | Stop Sign   |   |        | Uncontrolled |     |        | Uncontrolled |     |        |
| Lanes:      | 0           | 0  | 1! 0 0 | 0           | 0 | 1! 0 0 | 0            | 0   | 1! 0 0 | 0            | 0   | 1! 0 0 |
| Final Vol.: | 8           | 11 | 25     | 26          | 7 | 5      | 6            | 423 | 6      | 11           | 439 | 5      |

Major Street Volume: 890

Minor Approach Volume: 44

Minor Approach Volume Threshold: 250

Sutter Medical Center  
EXISTING NO PROJECT  
PM Peak Hour

Peak Hour Delay Signal Warrant Report

\*\*\*\*\*  
Intersection #6397 27th St & L St  
\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:    | North Bound |   |   |   | South Bound |   |   |   | East Bound   |   |   |   | West Bound   |     |   |   |
|--------------|-------------|---|---|---|-------------|---|---|---|--------------|---|---|---|--------------|-----|---|---|
| Movement:    | L           | T | R |   | L           | T | R |   | L            | T | R |   | L            | T   | R |   |
| Control:     | Stop Sign   |   |   |   | Stop Sign   |   |   |   | Uncontrolled |   |   |   | Uncontrolled |     |   |   |
| Lanes:       | 1           | 0 | 0 | 0 | 0           | 0 | 0 | 0 | 0            | 0 | 0 | 0 | 0            | 1   | 1 | 0 |
| Final Vol.:  | 27          | 0 | 0 | 0 | 0           | 0 | 0 | 0 | 0            | 0 | 0 | 0 | 13           | 547 | 0 | 0 |
| ApproachDel: | 10.4        |   |   |   | xxxxxx      |   |   |   | xxxxxx       |   |   |   | xxxxxx       |     |   |   |

Approach[northbound][lanes=1][control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.1]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=27]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=2][total volume=587]  
FAIL - Total volume less than 650 for intersection  
with less than four approaches.

Sutter Medical Center  
EXISTING NO PROJECT  
PM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

\*\*\*\*\*

Intersection #6397 27th St & L St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:                        | North Bound |   |   | South Bound |   |   | East Bound   |   |   | West Bound   |     |   |
|----------------------------------|-------------|---|---|-------------|---|---|--------------|---|---|--------------|-----|---|
| Movement:                        | L           | T | R | L           | T | R | L            | T | R | L            | T   | R |
| Control:                         | Stop Sign   |   |   | Stop Sign   |   |   | Uncontrolled |   |   | Uncontrolled |     |   |
| Lanes:                           | 1           | 0 | 0 | 0           | 0 | 0 | 0            | 0 | 0 | 0            | 1   | 1 |
| Final Vol.:                      | 27          | 0 | 0 | 0           | 0 | 0 | 0            | 0 | 0 | 13           | 547 | 0 |
| Major Street Volume:             |             |   |   |             |   |   | 560          |   |   |              |     |   |
| Minor Approach Volume:           |             |   |   |             |   |   | 27           |   |   |              |     |   |
| Minor Approach Volume Threshold: |             |   |   |             |   |   | 485          |   |   |              |     |   |

Sutter Medical Center
EXISTING NO PROJECT
PM Peak Hour

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #3434 26th St & N St
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.535
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 12.3
Optimal Cycle: 0 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for different traffic movements and 10 rows for various adjustment factors like Base Vol, Growth Adj, etc.

Saturation Flow Module table with 12 columns and 3 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 10 rows for Vol/Sat, Crit Moves, Delay/Veh, etc.

Sutter Medical Center
EXISTING NO PROJECT
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #5800 26th St & K St
\*\*\*\*\*

Average Delay (sec/veh): 3.5 Worst Case Level Of Service: C[ 21.1]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns for volume components (Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Vol.) across four directions.

Critical Gap Module: Table with 13 columns for critical gap and follow-up times across four directions.

Capacity Module: Table with 13 columns for capacity-related metrics (Conflict Vol, Potent Cap., Move Cap., Volume/Cap.) across four directions.

Level of Service Module: Table with 13 columns for level of service metrics (Queue, Stopped Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd StpDel, Shared LOS, ApproachDel, ApproachLOS) across four directions.

Sutter Medical Center
EXISTING NO PROJECT
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #6395 27th St & N St
\*\*\*\*\*

Average Delay (sec/veh): 1.1 Worst Case Level Of Service: B[ 14.6]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns representing different traffic volumes and adjustment factors.

Critical Gap Module: Table with 12 columns showing critical gap values and follow-up times.

Capacity Module: Table with 12 columns showing conflict volumes, potential capacity, and volume/capacity ratios.

Level Of Service Module: Table with 12 columns showing queue lengths, stopped delays, LOS by movement, and approach delays.



Sutter Medical Center
EXISTING NO PROJECT
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #6396 Capitol Ave & 27th St
\*\*\*\*\*

Average Delay (sec/veh): 1.7 Worst Case Level Of Service: C[ 21.0]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns for volume and adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Vol.

Critical Gap Module: Table with 12 columns for gap and follow-up times. Rows include Critical Gp and FollowUpTim.

Capacity Module: Table with 12 columns for capacity and volume/capacity. Rows include Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module: Table with 12 columns for queue, delay, LOS, and approach. Rows include Queue, Stopped Del, LOS by Move, Movement, Shared Cap., Shrd StpDel, Shared LOS, ApproachDel, and ApproachLOS.

Sutter Medical Center
EXISTING NO PROJECT
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #6397 27th St & L St
\*\*\*\*\*

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: B[ 10.4]
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns for volume and adjustment factors (Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Vol).

Critical Gap Module: Table with 13 columns for gap and follow-up times.

Capacity Module: Table with 13 columns for capacity and volume/capacity ratios.

Level of Service Module: Table with 13 columns for queue, delay, LOS, and approach delay.

EXISTING PLUS SUTTER PROJECT WITH SMART PLAN

AM Peak Hour

Unsignalized Intersections

(am2)



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Sutter Medical Center  
EXISTING PLUS SUTTER PROJECT  
AM Peak Hour

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Scenario Report

Scenario: am2EXsp  
Command: am2EXsp  
Volume: am2EXsp  
Geometry: am2EXsp  
Impact Fee: Default Impact Fee  
Trip Generation: Default Trip Generation  
Trip Distribution: Default Trip Distribution  
Paths: Default Paths  
Routes: Default Routes  
Configuration: Default Configuration

Sutter Medical Center
EXISTING PLUS SUTTER PROJECT
AM Peak Hour

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #3434 26th St & N St
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.183
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 8.4
Optimal Cycle: 0 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns representing different traffic movements and 10 rows of adjustment factors like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns and 3 rows showing adjustment factors for saturation flow.

Capacity Analysis Module: Table with 12 columns and 10 rows showing delay, LOS, and approach delay analysis.

\*\*\*\*\*

Sutter Medical Center
EXISTING PLUS SUTTER PROJECT
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #5800 26th St & K St
\*\*\*\*\*

Average Delay (sec/veh): 2.9 Worst Case Level Of Service: B[ 14.9]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L, T, R). Rows include Control, Rights, and Lanes.

Volume Module: Table with 13 columns for volume metrics (Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Vol) across four approaches.

Critical Gap Module: Table with 13 columns for gap metrics (Critical Gp, FollowUpTim) across four approaches.

Capacity Module: Table with 13 columns for capacity metrics (Cnflct Vol, Potent Cap., Move Cap., Volume/Cap) across four approaches.

Level Of Service Module: Table with 13 columns for LOS metrics (Queue, Stopped Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd StpDel, Shared LOS, ApproachDel, ApproachLOS) across four approaches.

Sutter Medical Center
EXISTING PLUS SUTTER PROJECT
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #6395 27th St & N St
\*\*\*\*\*

Average Delay (sec/veh): 3.3 Worst Case Level Of Service: B [ 11.8]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns for volume metrics (Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Vol) across four approaches.

Critical Gap Module: Table with 12 columns for critical gap and follow-up time metrics across four approaches.

Capacity Module: Table with 12 columns for capacity metrics (Cnflct Vol, Potent Cap., Move Cap., Volume/Cap) across four approaches.

Level Of Service Module: Table with 12 columns for LOS metrics (Queue, Stopped Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd StpDel, Shared LOS, ApproachDel, ApproachLOS) across four approaches.



Sutter Medical Center
EXISTING PLUS SUTTER PROJECT
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #6396 Capitol Ave & 27th St
\*\*\*\*\*

Average Delay (sec/veh): 4.9 Worst Case Level Of Service: C [ 20.2]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns for traffic movements and 4 rows for Base Vol, Growth Adj, Initial Bse, and PHF Volume.

Critical Gap Module: Table with 13 columns for traffic movements and 2 rows for Critical Gp and FollowUpTim.

Capacity Module: Table with 13 columns for traffic movements and 4 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module: Table with 13 columns for traffic movements and 7 rows for Queue, Stopped Del, LOS by Move, Movement, Shared Cap., Shrd StpDel, Shared LOS, ApproachDel, and ApproachLOS.

Sutter Medical Center
EXISTING PLUS SUTTER PROJECT
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #6397 27th St & L St
\*\*\*\*\*
Average Delay (sec/veh): 2.0 Worst Case Level Of Service: B[ 13.7]
\*\*\*\*\*
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Stop Sign Stop Sign Uncontrolled Uncontrolled
Rights: Include Include Include Include
Lanes: 1 0 0 0 0 0 0 0 0 0 0 0 1 2 0 0
Volume Module:
Base Vol: 40 0 0 0 0 0 0 0 0 0 134 760 0
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 40 0 0 0 0 0 0 0 0 0 134 760 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 40 0 0 0 0 0 0 0 0 0 134 760 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Final Vol.: 40 0 0 0 0 0 0 0 0 0 134 760 0
Critical Gap Module:
Critical Gp: 6.4 xxxx xxxxxx xxxxxx xxxx xxxxxx xxxxxx xxxx xxxxxx 4.1 xxxx xxxxxx
FollowUpTim: 3.5 xxxx xxxxxx xxxxxx xxxx xxxxxx xxxxxx xxxx xxxxxx 2.2 xxxx xxxxxx
Capacity Module:
Cnflct Vol: 521 xxxx xxxxxx xxxx xxxx xxxxxx xxxx xxxx xxxxxx 0 xxxx xxxxxx
Potent Cap.: 519 xxxx xxxxxx xxxx xxxx xxxxxx xxxx xxxx xxxxxx 900 xxxx xxxxxx
Move Cap.: 455 xxxx xxxxxx xxxx xxxx xxxxxx xxxx xxxx xxxxxx 900 xxxx xxxxxx
Volume/Cap: 0.09 xxxx xxxxxx xxxx xxxx xxxx xxxx xxxx xxxxxx 0.15 xxxx xxxxxx
Level Of Service Module:
Queue: 0.3 xxxx xxxxxx xxxxxx xxxx xxxxxx xxxxxx xxxx xxxxxx 0.5 xxxx xxxxxx
Stopped Del: 13.7 xxxx xxxxxx xxxxxx xxxx xxxxxx xxxxxx xxxx xxxxxx 9.7 xxxx xxxxxx
LOS by Move: B \* \* \* \* \* A \* \*
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxxx xxxx xxxx xxxxxx xxxx xxxx xxxxxx xxxx xxxx xxxxxx
SharedQueue:xxxxx xxxx xxxxxx xxxxxx xxxx xxxxxx xxxxxx xxxx xxxxxx 0.5 xxxx xxxxxx
Shrd StpDel:xxxxx xxxx xxxxxx xxxxxx xxxx xxxxxx xxxxxx xxxx xxxxxx 9.7 xxxx xxxxxx
Shared LOS: \* \* \* \* \* A \* \*
ApproachDel: 13.7 xxxxxxxx xxxxxxxx xxxxxxxx
ApproachLOS: B \* \*

**EXISTING PLUS SUTTER PROJECT WITH SMART PLAN**

**PM Peak Hour**

**Unsignalized Intersections**

**(pm2)**



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Sutter Medical Center  
EXISTING PLUS SUTTER PROJECT  
PM Peak Hour

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Scenario Report

Scenario: pm2EXsp  
Command: pm2EXsp  
Volume: pm2EXsp  
Geometry: pm2EXsp  
Impact Fee: Default Impact Fee  
Trip Generation: Default Trip Generation  
Trip Distribution: Default Trip Distribution  
Paths: Default Paths  
Routes: Default Routes  
Configuration: Default Configuration

Sutter Medical Center
EXISTING PLUS SUTTER PROJECT
PM Peak Hour

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #3434 26th St & N St

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.371

Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 10.1

Optimal Cycle: 0 Level Of Service: B

\*\*\*\*\*

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Stop Sign Stop Sign

Rights: Include Include Include Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Lanes: 0 0 0 1 0 0 1 0 0 0 0 1 1 1 0 0 0 0 0 0

-----|-----|-----|-----|

Volume Module:

Base Vol: 0 51 20 15 44 0 44 745 20 0 0 0

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 0 51 20 15 44 0 44 745 20 0 0 0

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 0 51 20 15 44 0 44 745 20 0 0 0

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 0 51 20 15 44 0 44 745 20 0 0 0

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Final Vol.: 0 51 20 15 44 0 44 745 20 0 0 0

-----|-----|-----|-----|

Saturation Flow Module:

Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Lanes: 0.00 0.72 0.28 0.25 0.75 0.00 0.16 2.77 0.07 0.00 0.00 0.00

Final Sat.: 0 476 187 161 473 0 119 2041 55 0 0 0

-----|-----|-----|-----|

Capacity Analysis Module:

Vol/Sat: xxxx 0.11 0.11 0.09 0.09 xxxx 0.37 0.37 0.36 xxxx xxxx xxxx

Crit Moves: \*\*\*\* \*\*\*\* \*\*\*\*

Delay/Veh: 0.0 8.8 8.8 9.0 9.0 0.0 10.5 10.3 10.1 0.0 0.0 0.0

Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

AdjDel/Veh: 0.0 8.8 8.8 9.0 9.0 0.0 10.5 10.3 10.1 0.0 0.0 0.0

LOS by Move: \* A A A A \* B B B \* \* \*

ApproachDel: 8.8 9.0 10.3 xxxxxx

Delay Adj: 1.00 1.00 xxxxxx

ApprAdjDel: 8.8 9.0 10.3 xxxxxx

LOS by Appr: A A B \*

\*\*\*\*\*

Sutter Medical Center
EXISTING PLUS SUTTER PROJECT
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #5800 26th St & K St

\*\*\*\*\*

Average Delay (sec/veh): 4.2 Worst Case Level Of Service: C [ 20.6]

\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns for traffic movements and 4 rows for Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Vol.

Critical Gap Module: Table with 13 columns for traffic movements and 2 rows for Critical Gp, FollowUpTim.

Capacity Module: Table with 13 columns for traffic movements and 4 rows for Cnflct Vol, Potent Cap, Move Cap, Volume/Cap.

Level Of Service Module: Table with 13 columns for traffic movements and 8 rows for Queue, Stopped Del, LOS by Move, Movement, Shared Cap, Shared Queue, Shrd StpDel, Shared LOS, ApproachDel, ApproachLOS.

Sutter Medical Center
EXISTING PLUS SUTTER PROJECT
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #6395 27th St & N St

\*\*\*\*\*

Average Delay (sec/veh): 3.4 Worst Case Level Of Service: C[ 15.3]

\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module table with 12 columns representing different traffic movements and 7 rows of volume-related metrics.

Critical Gap Module table with 12 columns and 2 rows of gap and follow-up time data.

Capacity Module table with 12 columns and 4 rows of capacity and volume/capacity data.

Level Of Service Module table with 12 columns and 8 rows of queue, delay, and LOS data.



Sutter Medical Center
EXISTING PLUS SUTTER PROJECT
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #6396 Capitol Ave & 27th St
\*\*\*\*\*

Average Delay (sec/veh): 10.7 Worst Case Level Of Service: F[ 51.7]
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns for traffic volumes and adjustment factors (Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Vol).

Critical Gap Module: Table with 13 columns for critical gap and follow-up time values.

Capacity Module: Table with 13 columns for conflict volume, potential capacity, move capacity, and volume/capacity ratios.

Level Of Service Module: Table with 13 columns for queue, stopped delay, LOS by move, movement, shared capacity, shared queue, shared stop delay, shared LOS, approach delay, and approach LOS.

Sutter Medical Center
EXISTING PLUS SUTTER PROJECT
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #6397 27th St & L St
\*\*\*\*\*

Average Delay (sec/veh): 2.1 Worst Case Level Of Service: B[ 13.0]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns for volume components (Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Vol) across four directions.

Critical Gap Module: Table with 13 columns for critical gap and follow-up time across four directions.

Capacity Module: Table with 13 columns for capacity-related metrics (Cnflct Vol, Potent Cap., Move Cap., Volume/Cap) across four directions.

Level Of Service Module: Table with 13 columns for level of service metrics (Queue, Stopped Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd StpDel, Shared LOS, ApproachDel, ApproachLOS) across four directions.

EXISTING PLUS TRINITY PROJECT WITH SMART PLAN

AM Peak Hour

Unsignalized Intersections

(am3)



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Sutter Medical Center  
EXISTING PLUS TRINITY  
AM Peak Hour

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| Intersection                | Signal Warrant Summary Report |  | Future Met<br>[Del / Vol] |
|-----------------------------|-------------------------------|--|---------------------------|
|                             | Base Met<br>[Del / Vol]       |  |                           |
| #3434 26th St & N St        |                               |  |                           |
| #5800 26th St & K St        | No / No                       |  | ??? / ???                 |
| #6395 27th St & N St        | No / No                       |  | ??? / ???                 |
| #6396 Capitol Ave & 27th St | No / No                       |  | ??? / ???                 |
| #6397 27th St & L St        | No / No                       |  | ??? / ???                 |

Sutter Medical Center  
EXISTING PLUS TRINITY  
AM Peak Hour

Peak Hour Delay Signal Warrant Report

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Intersection #5800 26th St & K St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:    | North Bound |    |        | South Bound |    |        | East Bound   |     |        | West Bound   |     |        |
|--------------|-------------|----|--------|-------------|----|--------|--------------|-----|--------|--------------|-----|--------|
| Movement:    | L           | T  | R      | L           | T  | R      | L            | T   | R      | L            | T   | R      |
| Control:     | Stop Sign   |    |        | Stop Sign   |    |        | Uncontrolled |     |        | Uncontrolled |     |        |
| Lanes:       | 0           | 0  | 1! 0 0 | 0           | 0  | 1! 0 0 | 0            | 0   | 1! 0 0 | 0            | 0   | 1! 0 0 |
| Final Vol.:  | 15          | 37 | 31     | 2           | 27 | 11     | 13           | 153 | 19     | 15           | 429 | 38     |
| ApproachDel: | 14.6        |    |        | 14.7        |    |        | xxxxxxx      |     |        | xxxxxxx      |     |        |

Approach[northbound] [lanes=1] [control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.3]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=83]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=4][total volume=790]  
FAIL - Total volume less than 800 for intersection  
with four or more approaches.

Approach[southbound] [lanes=1] [control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.2]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=40]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=4][total volume=790]  
FAIL - Total volume less than 800 for intersection  
with four or more approaches.

Sutter Medical Center  
EXISTING PLUS TRINITY  
AM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

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Intersection #5800 26th St & K St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:                        | North Bound |    |        | South Bound |    |        | East Bound   |     |        | West Bound   |     |        |
|----------------------------------|-------------|----|--------|-------------|----|--------|--------------|-----|--------|--------------|-----|--------|
| Movement:                        | L           | T  | R      | L           | T  | R      | L            | T   | R      | L            | T   | R      |
| Control:                         | Stop Sign   |    |        | Stop Sign   |    |        | Uncontrolled |     |        | Uncontrolled |     |        |
| Lanes:                           | 0           | 0  | 1! 0 0 | 0           | 0  | 1! 0 0 | 0            | 0   | 1! 0 0 | 0            | 0   | 1! 0 0 |
| Final Vol.:                      | 15          | 37 | 31     | 2           | 27 | 11     | 13           | 153 | 19     | 15           | 429 | 38     |
| Major Street Volume:             | 667         |    |        |             |    |        |              |     |        |              |     |        |
| Minor Approach Volume:           | 83          |    |        |             |    |        |              |     |        |              |     |        |
| Minor Approach Volume Threshold: | 327         |    |        |             |    |        |              |     |        |              |     |        |

Sutter Medical Center  
EXISTING PLUS TRINITY  
AM Peak Hour

Peak Hour Delay Signal Warrant Report

\*\*\*\*\*  
Intersection #6395 27th St & N St  
\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:    | North Bound |    |    | South Bound |   |   | East Bound   |     |   | West Bound   |   |   |   |   |   |   |   |   |
|--------------|-------------|----|----|-------------|---|---|--------------|-----|---|--------------|---|---|---|---|---|---|---|---|
| Movement:    | L           | T  | R  | L           | T | R | L            | T   | R | L            | T | R |   |   |   |   |   |   |
| Control:     | Stop Sign   |    |    | Stop Sign   |   |   | Uncontrolled |     |   | Uncontrolled |   |   |   |   |   |   |   |   |
| Lanes:       | 0           | 0  | 1  | 0           | 0 | 1 | 0            | 0   | 0 | 1            | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Final Vol.:  | 0           | 13 | 19 | 28          | 4 | 0 | 13           | 313 | 4 | 0            | 0 | 0 | 0 | 0 | 0 | 0 | 0 |   |
| ApproachDel: | 10.0        |    |    | 8.5         |   |   | xxxxxxx      |     |   | xxxxxxx      |   |   |   |   |   |   |   |   |

Approach[northbound][lanes=1][control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.1]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=32]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=3][total volume=394]  
FAIL - Total volume less than 650 for intersection  
with less than four approaches.

Approach[southbound][lanes=1][control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.1]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=32]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=3][total volume=394]  
FAIL - Total volume less than 650 for intersection  
with less than four approaches.



Sutter Medical Center  
EXISTING PLUS TRINITY  
AM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

\*\*\*\*\*

Intersection #6395 27th St & N St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:   | North Bound |    |    |   | South Bound |   |   |   | East Bound   |     |   |   | West Bound   |   |   |   |   |   |   |   |
|-------------|-------------|----|----|---|-------------|---|---|---|--------------|-----|---|---|--------------|---|---|---|---|---|---|---|
| Movement:   | L           | T  | R  |   | L           | T | R |   | L            | T   | R |   | L            | T | R |   |   |   |   |   |
| Control:    | Stop Sign   |    |    |   | Stop Sign   |   |   |   | Uncontrolled |     |   |   | Uncontrolled |   |   |   |   |   |   |   |
| Lanes:      | 0           | 0  | 0  | 1 | 0           | 0 | 1 | 0 | 0            | 0   | 0 | 1 | 1            | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Final Vol.: | 0           | 13 | 19 |   | 28          | 4 | 0 |   | 13           | 313 | 4 |   | 0            | 0 | 0 |   |   |   |   |   |

Major Street Volume: 330

Minor Approach Volume: 32

Minor Approach Volume Threshold: 667

Sutter Medical Center  
EXISTING PLUS TRINITY  
AM Peak Hour

Peak Hour Delay Signal Warrant Report

\*\*\*\*\*  
Intersection #6396 Capitol Ave & 27th St  
\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:    | North Bound |    |        | South Bound |   |        | East Bound   |     |        | West Bound   |     |        |
|--------------|-------------|----|--------|-------------|---|--------|--------------|-----|--------|--------------|-----|--------|
| Movement:    | L           | T  | R      | L           | T | R      | L            | T   | R      | L            | T   | R      |
| Control:     | Stop Sign   |    |        | Stop Sign   |   |        | Uncontrolled |     |        | Uncontrolled |     |        |
| Lanes:       | 0           | 0  | 1! 0 0 | 0           | 0 | 1! 0 0 | 0            | 0   | 1! 0 0 | 0            | 0   | 1! 0 0 |
| Final Vol.:  | 5           | 14 | 15     | 28          | 1 | 6      | 10           | 231 | 2      | 20           | 450 | 24     |
| ApproachDel: | 13.8        |    |        | 17.3        |   |        | xxxxxx       |     |        | xxxxxx       |     |        |

Approach[northbound][lanes=1][control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.1]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=34]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=4][total volume=806]  
SUCCEED - Total volume greater than or equal to 800 for intersection  
with four or more approaches.

Approach[southbound][lanes=1][control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.2]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=35]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=4][total volume=806]  
SUCCEED - Total volume greater than or equal to 800 for intersection  
with four or more approaches.

Sutter Medical Center  
EXISTING PLUS TRINITY  
AM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

\*\*\*\*\*  
Intersection #6396 Capitol Ave & 27th St  
\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:                        | North Bound |    |        | South Bound |   |        | East Bound   |     |        | West Bound   |     |        |
|----------------------------------|-------------|----|--------|-------------|---|--------|--------------|-----|--------|--------------|-----|--------|
| Movement:                        | L           | T  | R      | L           | T | R      | L            | T   | R      | L            | T   | R      |
| Control:                         | Stop Sign   |    |        | Stop Sign   |   |        | Uncontrolled |     |        | Uncontrolled |     |        |
| Lanes:                           | 0           | 0  | 1! 0 0 | 0           | 0 | 1! 0 0 | 0            | 0   | 1! 0 0 | 0            | 0   | 1! 0 0 |
| Final Vol.:                      | 5           | 14 | 15     | 28          | 1 | 6      | 10           | 231 | 2      | 20           | 450 | 24     |
| Major Street Volume:             |             |    |        |             |   |        | 737          |     |        |              |     |        |
| Minor Approach Volume:           |             |    |        |             |   |        | 35           |     |        |              |     |        |
| Minor Approach Volume Threshold: |             |    |        |             |   |        | 301          |     |        |              |     |        |

Sutter Medical Center  
EXISTING PLUS TRINITY  
AM Peak Hour

Peak Hour Delay Signal Warrant Report

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Intersection #6397 27th St & L St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:    | North Bound |   |   | South Bound |   |   | East Bound   |   |   | West Bound   |     |   |
|--------------|-------------|---|---|-------------|---|---|--------------|---|---|--------------|-----|---|
| Movement:    | L           | T | R | L           | T | R | L            | T | R | L            | T   | R |
| Control:     | Stop Sign   |   |   | Stop Sign   |   |   | Uncontrolled |   |   | Uncontrolled |     |   |
| Lanes:       | 1           | 0 | 0 | 0           | 0 | 0 | 0            | 0 | 0 | 0            | 1   | 2 |
| Final Vol.:  | 35          | 0 | 0 | 0           | 0 | 0 | 0            | 0 | 0 | 30           | 735 | 0 |
| ApproachDel: | 10.6        |   |   | xxxxxx      |   |   | xxxxxx       |   |   | xxxxxx       |     |   |

Approach[northbound][lanes=1][control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.1]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=35]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=2][total volume=800]  
SUCCEED - Total volume greater than or equal to 650 for intersection  
with less than four approaches.

Sutter Medical Center  
EXISTING PLUS TRINITY  
AM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

\*\*\*\*\*

Intersection #6397 27th St & L St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:                        | North Bound |   |   |   | South Bound |   |   |   | East Bound   |   |     |   | West Bound   |   |    |    |     |   |   |   |
|----------------------------------|-------------|---|---|---|-------------|---|---|---|--------------|---|-----|---|--------------|---|----|----|-----|---|---|---|
| Movement:                        | L           | - | T | - | R           | L | - | T | -            | R | L   | - | T            | - | R  | L  | -   | T | - | R |
| Control:                         | Stop Sign   |   |   |   | Stop Sign   |   |   |   | Uncontrolled |   |     |   | Uncontrolled |   |    |    |     |   |   |   |
| Lanes:                           | 1           | 0 | 0 | 0 | 0           | 0 | 0 | 0 | 0            | 0 | 0   | 0 | 0            | 0 | 0  | 0  | 1   | 2 | 0 | 0 |
| Final Vol.:                      | 35          |   | 0 |   | 0           | 0 |   | 0 |              | 0 | 0   |   | 0            |   | 0  | 30 | 735 |   |   | 0 |
| Major Street Volume:             |             |   |   |   |             |   |   |   |              |   | 765 |   |              |   |    |    |     |   |   |   |
| Minor Approach Volume:           |             |   |   |   |             |   |   |   |              |   |     |   |              |   | 35 |    |     |   |   |   |
| Minor Approach Volume Threshold: | 377         |   |   |   |             |   |   |   |              |   |     |   |              |   |    |    |     |   |   |   |

Sutter Medical Center  
EXISTING PLUS TRINITY  
AM Peak Hour

Level Of Service Computation Report  
2000 HCM 4-Way Stop Method (Base Volume Alternative)

\*\*\*\*\*  
Intersection #3434 26th St & N St  
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.155  
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 8.2  
Optimal Cycle: 0 Level Of Service: A  
\*\*\*\*\*

Approach: North Bound South Bound East Bound West Bound  
Movement: L - T - R | L - T - R | L - T - R | L - T - R |  
Control: Stop Sign Stop Sign Stop Sign Stop Sign  
Rights: Include Include Include Include  
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0  
Lanes: 0 0 0 1 0 0 1 0 0 0 0 1 1 1 0 0 0 0 0 0  
\*\*\*\*\*

Volume Module:  
Base Vol: 0 56 15 11 19 0 60 263 7 0 0 0  
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
Initial Bse: 0 56 15 11 19 0 60 263 7 0 0 0  
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
PHF Volume: 0 56 15 11 19 0 60 263 7 0 0 0  
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0  
Reduced Vol: 0 56 15 11 19 0 60 263 7 0 0 0  
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
Final Vol.: 0 56 15 11 19 0 60 263 7 0 0 0  
\*\*\*\*\*

Saturation Flow Module:  
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
Lanes: 0.00 0.79 0.21 0.37 0.63 0.00 0.55 2.39 0.06 0.00 0.00 0.00  
Final Sat.: 0 603 161 266 459 0 388 1787 48 0 0 0  
\*\*\*\*\*

Capacity Analysis Module:  
Vol/Sat: xxxx 0.09 0.09 0.04 0.04 xxxx 0.15 0.15 0.14 xxxx xxxx xxxx  
Crit Moves: \*\*\*\* \*\*\*\* \*\*\*\*  
Delay/Veh: 0.0 8.0 8.0 8.0 8.0 0.0 8.6 8.3 8.2 0.0 0.0 0.0  
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
AdjDel/Veh: 0.0 8.0 8.0 8.0 8.0 0.0 8.6 8.3 8.2 0.0 0.0 0.0  
LOS by Move: \* A A A A \* A A A \* \* \*  
ApproachDel: 8.0 8.0 8.3 xxxxxxx  
Delay Adj: 1.00 1.00 1.00 xxxxxxx  
ApprAdjDel: 8.0 8.0 8.3 xxxxxxx  
LOS by Appr: A A A \*  
\*\*\*\*\*

Sutter Medical Center  
EXISTING PLUS TRINITY  
AM Peak Hour

Level Of Service Computation Report  
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #5800 26th St & K St

\*\*\*\*\*

Average Delay (sec/veh): 2.6 Worst Case Level Of Service: B [ 14.7]

\*\*\*\*\*

| Approach: | North Bound |   |        | South Bound |   |        | East Bound   |   |        | West Bound   |   |        |
|-----------|-------------|---|--------|-------------|---|--------|--------------|---|--------|--------------|---|--------|
| Movement: | L           | T | R      | L           | T | R      | L            | T | R      | L            | T | R      |
| Control:  | Stop Sign   |   |        | Stop Sign   |   |        | Uncontrolled |   |        | Uncontrolled |   |        |
| Rights:   | Include     |   |        | Include     |   |        | Include      |   |        | Include      |   |        |
| Lanes:    | 0           | 0 | 1! 0 0 | 0           | 0 | 1! 0 0 | 0            | 0 | 1! 0 0 | 0            | 0 | 1! 0 0 |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 15   | 37   | 31   | 2    | 27   | 11   | 13   | 153  | 19   | 15   | 429  | 38   |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 15   | 37   | 31   | 2    | 27   | 11   | 13   | 153  | 19   | 15   | 429  | 38   |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 15   | 37   | 31   | 2    | 27   | 11   | 13   | 153  | 19   | 15   | 429  | 38   |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Final Vol.:  | 15   | 37   | 31   | 2    | 27   | 11   | 13   | 153  | 19   | 15   | 429  | 38   |

Critical Gap Module:

|              |     |     |     |     |     |     |     |      |       |     |      |       |
|--------------|-----|-----|-----|-----|-----|-----|-----|------|-------|-----|------|-------|
| Critical Gp: | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | xxxx | xxxxx | 4.1 | xxxx | xxxxx |
| FollowUpTim: | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | xxxx | xxxxx | 2.2 | xxxx | xxxxx |

Capacity Module:

|              |      |      |      |      |      |      |      |      |       |      |      |       |
|--------------|------|------|------|------|------|------|------|------|-------|------|------|-------|
| Cnflct Vol:  | 686  | 686  | 163  | 701  | 676  | 448  | 467  | xxxx | xxxxx | 172  | xxxx | xxxxx |
| Potent Cap.: | 365  | 373  | 888  | 356  | 378  | 615  | 1105 | xxxx | xxxxx | 1417 | xxxx | xxxxx |
| Move Cap.:   | 332  | 365  | 888  | 312  | 369  | 615  | 1105 | xxxx | xxxxx | 1417 | xxxx | xxxxx |
| Volume/Cap:  | 0.05 | 0.10 | 0.03 | 0.01 | 0.07 | 0.02 | 0.01 | xxxx | xxxx  | 0.01 | xxxx | xxxx  |

Level Of Service Module:

|              |       |      |       |       |      |       |         |      |       |         |      |       |
|--------------|-------|------|-------|-------|------|-------|---------|------|-------|---------|------|-------|
| Queue:       | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | 0.0     | xxxx | xxxxx | 0.0     | xxxx | xxxxx |
| Stopped Del: | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | 8.3     | xxxx | xxxxx | 7.6     | xxxx | xxxxx |
| LOS by Move: | *     | *    | *     | *     | *    | *     | A       | *    | *     | A       | *    | *     |
| Movement:    | LT    | LTR  | RT    | LT    | LTR  | RT    | LT      | LTR  | RT    | LT      | LTR  | RT    |
| Shared Cap.: | xxxxx | 457  | xxxxx | xxxxx | 411  | xxxxx | xxxxx   | xxxx | xxxxx | xxxxx   | xxxx | xxxxx |
| SharedQueue: | xxxxx | 0.7  | xxxxx | xxxxx | 0.3  | xxxxx | xxxxx   | xxxx | xxxxx | xxxxx   | xxxx | xxxxx |
| Shrd StpDel: | xxxxx | 14.6 | xxxxx | xxxxx | 14.7 | xxxxx | xxxxx   | xxxx | xxxxx | xxxxx   | xxxx | xxxxx |
| Shared LOS:  | *     | B    | *     | *     | B    | *     | *       | *    | *     | *       | *    | *     |
| ApproachDel: |       | 14.6 |       |       | 14.7 |       | xxxxxxx |      |       | xxxxxxx |      |       |
| ApproachLOS: |       | B    |       |       | B    |       |         | *    |       |         | *    |       |

Sutter Medical Center
EXISTING PLUS TRINITY
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #6395 27th St & N St

\*\*\*\*\*

Average Delay (sec/veh): 1.8 Worst Case Level Of Service: A[ 10.0]

\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module:

Table with 13 columns representing different traffic movements and 10 rows of volume-related metrics like Base Vol, Growth Adj, etc.

Critical Gap Module:

Table with 13 columns and 2 rows showing Critical Gap and FollowUpTim values.

Capacity Module:

Table with 13 columns and 4 rows showing Capacity-related metrics like Cnflct Vol, Potent Cap, etc.

Level Of Service Module:

Table with 13 columns and 10 rows showing Level of Service metrics like Queue, Stopped Del, LOS by Move, etc.



Sutter Medical Center  
EXISTING PLUS TRINITY  
AM Peak Hour

Level Of Service Computation Report  
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #6396 Capitol Ave & 27th St

\*\*\*\*\*

Average Delay (sec/veh): 1.6 Worst Case Level Of Service: C[ 17.3]

\*\*\*\*\*

| Approach: | North Bound |   |    | South Bound |   |   | East Bound   |    |   | West Bound   |   |   |    |   |   |   |   |    |   |   |
|-----------|-------------|---|----|-------------|---|---|--------------|----|---|--------------|---|---|----|---|---|---|---|----|---|---|
| Movement: | L           | - | T  | -           | R | L | -            | T  | - | R            | L | - | T  | - | R | L | - | T  | - | R |
| Control:  | Stop Sign   |   |    | Stop Sign   |   |   | Uncontrolled |    |   | Uncontrolled |   |   |    |   |   |   |   |    |   |   |
| Rights:   | Include     |   |    | Include     |   |   | Include      |    |   | Include      |   |   |    |   |   |   |   |    |   |   |
| Lanes:    | 0           | 0 | 1! | 0           | 0 | 0 | 0            | 1! | 0 | 0            | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 1! | 0 | 0 |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 5    | 14   | 15   | 28   | 1    | 6    | 10   | 231  | 2    | 20   | 450  | 24   |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 5    | 14   | 15   | 28   | 1    | 6    | 10   | 231  | 2    | 20   | 450  | 24   |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 5    | 14   | 15   | 28   | 1    | 6    | 10   | 231  | 2    | 20   | 450  | 24   |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Final Vol.:  | 5    | 14   | 15   | 28   | 1    | 6    | 10   | 231  | 2    | 20   | 450  | 24   |

Critical Gap Module:

|              |     |     |     |     |     |     |     |      |        |     |      |        |
|--------------|-----|-----|-----|-----|-----|-----|-----|------|--------|-----|------|--------|
| Critical Gp: | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | xxxx | xxxxxx | 4.1 | xxxx | xxxxxx |
| FollowUpTim: | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | xxxx | xxxxxx | 2.2 | xxxx | xxxxxx |

Capacity Module:

|              |      |      |      |      |      |      |      |      |        |      |      |        |
|--------------|------|------|------|------|------|------|------|------|--------|------|------|--------|
| Cnflict Vol: | 758  | 766  | 232  | 769  | 755  | 462  | 474  | xxxx | xxxxxx | 233  | xxxx | xxxxxx |
| Potent Cap.: | 326  | 335  | 812  | 321  | 340  | 604  | 1099 | xxxx | xxxxxx | 1346 | xxxx | xxxxxx |
| Move Cap.:   | 316  | 327  | 812  | 299  | 332  | 604  | 1099 | xxxx | xxxxxx | 1346 | xxxx | xxxxxx |
| Volume/Cap:  | 0.02 | 0.04 | 0.02 | 0.09 | 0.00 | 0.01 | 0.01 | xxxx | xxxx   | 0.01 | xxxx | xxxx   |

Level Of Service Module:

|              |        |      |        |        |      |        |         |      |        |         |      |        |     |   |    |
|--------------|--------|------|--------|--------|------|--------|---------|------|--------|---------|------|--------|-----|---|----|
| Queue:       | xxxxxx | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx | 0.0     | xxxx | xxxxxx | 0.0     | xxxx | xxxxxx |     |   |    |
| Stopped Del: | xxxxxx | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx | 8.3     | xxxx | xxxxxx | 7.7     | xxxx | xxxxxx |     |   |    |
| LOS by Move: | *      | *    | *      | *      | *    | *      | A       | *    | *      | A       | *    | *      |     |   |    |
| Movement:    | LT     | -    | LTR    | -      | RT   | LT     | -       | LTR  | -      | RT      | LT   | -      | LTR | - | RT |
| Shared Cap.: | xxxx   | 441  | xxxxxx | xxxx   | 328  | xxxxxx | xxxx    | xxxx | xxxxxx | xxxx    | xxxx | xxxxxx |     |   |    |
| SharedQueue: | xxxxxx | 0.2  | xxxxxx | xxxxxx | 0.4  | xxxxxx | xxxxxx  | xxxx | xxxxxx | xxxxxx  | xxxx | xxxxxx |     |   |    |
| Shrd StpDel: | xxxxxx | 13.8 | xxxxxx | xxxxxx | 17.3 | xxxxxx | xxxxxx  | xxxx | xxxxxx | xxxxxx  | xxxx | xxxxxx |     |   |    |
| Shared LOS:  | *      | B    | *      | *      | C    | *      | *       | *    | *      | *       | *    | *      |     |   |    |
| ApproachDel: |        | 13.8 |        |        | 17.3 |        | xxxxxxx |      |        | xxxxxxx |      |        |     |   |    |
| ApproachLOS: |        | B    |        |        | C    |        |         | *    |        |         | *    |        |     |   |    |

Sutter Medical Center  
EXISTING PLUS TRINITY  
AM Peak Hour

Level Of Service Computation Report  
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*  
Intersection #6397 27th St & L St  
\*\*\*\*\*

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: B [ 10.6 ]  
\*\*\*\*\*

| Approach: | North Bound |   |   | South Bound |   |   | East Bound   |   |   | West Bound   |   |   |
|-----------|-------------|---|---|-------------|---|---|--------------|---|---|--------------|---|---|
| Movement: | L           | T | R | L           | T | R | L            | T | R | L            | T | R |
| Control:  | Stop Sign   |   |   | Stop Sign   |   |   | Uncontrolled |   |   | Uncontrolled |   |   |
| Rights:   | Include     |   |   | Include     |   |   | Include      |   |   | Include      |   |   |
| Lanes:    | 1           | 0 | 0 | 0           | 0 | 0 | 0            | 0 | 0 | 0            | 1 | 2 |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 35   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 30   | 735  | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 35   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 30   | 735  | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 35   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 30   | 735  | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Final Vol.:  | 35   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 30   | 735  | 0    |

Critical Gap Module:

|              |     |      |        |        |      |        |        |      |        |     |      |        |
|--------------|-----|------|--------|--------|------|--------|--------|------|--------|-----|------|--------|
| Critical Gp: | 6.4 | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx | 4.1 | xxxx | xxxxxx |
| FollowUpTim: | 3.5 | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx | 2.2 | xxxx | xxxxxx |

Capacity Module:

|              |      |      |        |        |      |        |        |      |        |      |      |        |
|--------------|------|------|--------|--------|------|--------|--------|------|--------|------|------|--------|
| Cnflct Vol:  | 305  | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx | 0    | xxxx | xxxxxx |
| Potent Cap.: | 691  | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx | 900  | xxxx | xxxxxx |
| Move Cap.:   | 673  | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx | 900  | xxxx | xxxxxx |
| Volume/Cap:  | 0.05 | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx | 0.03 | xxxx | xxxxxx |

Level Of Service Module:

|              |        |      |        |         |      |        |         |      |        |         |      |        |
|--------------|--------|------|--------|---------|------|--------|---------|------|--------|---------|------|--------|
| Queue:       | 0.2    | xxxx | xxxxxx | xxxxxx  | xxxx | xxxxxx | xxxxxx  | xxxx | xxxxxx | 0.1     | xxxx | xxxxxx |
| Stopped Del: | 10.6   | xxxx | xxxxxx | xxxxxx  | xxxx | xxxxxx | xxxxxx  | xxxx | xxxxxx | 9.1     | xxxx | xxxxxx |
| LOS by Move: | B      | *    | *      | *       | *    | *      | *       | *    | *      | A       | *    | *      |
| Movement:    | LT     | LTR  | RT     | LT      | LTR  | RT     | LT      | LTR  | RT     | LT      | LTR  | RT     |
| Shared Cap.: | xxxx   | xxxx | xxxxxx | xxxxxx  | xxxx | xxxxxx | xxxxxx  | xxxx | xxxxxx | xxxxxx  | xxxx | xxxxxx |
| SharedQueue: | xxxxxx | xxxx | xxxxxx | xxxxxx  | xxxx | xxxxxx | xxxxxx  | xxxx | xxxxxx | 0.1     | xxxx | xxxxxx |
| Shrd StpDel: | xxxxxx | xxxx | xxxxxx | xxxxxx  | xxxx | xxxxxx | xxxxxx  | xxxx | xxxxxx | 9.1     | xxxx | xxxxxx |
| Shared LOS:  | *      | *    | *      | *       | *    | *      | *       | *    | *      | A       | *    | *      |
| ApproachDel: | 10.6   |      |        | xxxxxxx |      |        | xxxxxxx |      |        | xxxxxxx |      |        |
| ApproachLOS: | B      |      |        | *       |      |        | *       |      |        | *       |      |        |

EXISTING PLUS TRINITY PROJECT WITH SMART PLAN

PM Peak Hour

Unsignalized Intersections

(pm3)



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Sutter Medical Center  
EXISTING PLUS TRINITY  
PM Peak Hour

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| Intersection                | Signal Warrant Summary Report |  | Future Met<br>[Del / Vol] |
|-----------------------------|-------------------------------|--|---------------------------|
|                             | Base Met<br>[Del / Vol]       |  |                           |
| #3434 26th St & N St        |                               |  |                           |
| #5800 26th St & K St        | No / No                       |  | ??? / ???                 |
| #6395 27th St & N St        | No / No                       |  | ??? / ???                 |
| #6396 Capitol Ave & 27th St | No / No                       |  | ??? / ???                 |
| #6397 27th St & L St        | No / No                       |  | ??? / ???                 |

Sutter Medical Center  
EXISTING PLUS TRINITY  
PM Peak Hour

Peak Hour Delay Signal Warrant Report

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Intersection #5800 26th St & K St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:    | North Bound |    |        | South Bound |    |        | East Bound   |     |        | West Bound   |     |        |
|--------------|-------------|----|--------|-------------|----|--------|--------------|-----|--------|--------------|-----|--------|
| Movement:    | L           | T  | R      | L           | T  | R      | L            | T   | R      | L            | T   | R      |
| Control:     | Stop Sign   |    |        | Stop Sign   |    |        | Uncontrolled |     |        | Uncontrolled |     |        |
| Lanes:       | 0           | 0  | 1! 0 0 | 0           | 0  | 1! 0 0 | 0            | 0   | 1! 0 0 | 0            | 0   | 1! 0 0 |
| Final Vol.:  | 5           | 61 | 29     | 1           | 40 | 27     | 14           | 315 | 20     | 26           | 480 | 30     |
| ApproachDel: | 20.8        |    |        | 18.4        |    |        | xxxxxxx      |     |        | xxxxxxx      |     |        |

Approach[northbound][lanes=1][control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.5]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=95]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=4][total volume=1048]  
SUCCEED - Total volume greater than or equal to 800 for intersection  
with four or more approaches.

Approach[southbound][lanes=1][control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.3]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=68]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=4][total volume=1048]  
SUCCEED - Total volume greater than or equal to 800 for intersection  
with four or more approaches.

Sutter Medical Center  
EXISTING PLUS TRINITY  
PM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

\*\*\*\*\*  
Intersection #5800 26th St & K St  
\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:                        | North Bound |    |        | South Bound |    |        | East Bound   |     |        | West Bound   |     |        |
|----------------------------------|-------------|----|--------|-------------|----|--------|--------------|-----|--------|--------------|-----|--------|
| Movement:                        | L           | T  | R      | L           | T  | R      | L            | T   | R      | L            | T   | R      |
| Control:                         | Stop Sign   |    |        | Stop Sign   |    |        | Uncontrolled |     |        | Uncontrolled |     |        |
| Lanes:                           | 0           | 0  | 1! 0 0 | 0           | 0  | 1! 0 0 | 0            | 0   | 1! 0 0 | 0            | 0   | 1! 0 0 |
| Final Vol.:                      | 5           | 61 | 29     | 1           | 40 | 27     | 14           | 315 | 20     | 26           | 480 | 30     |
| Major Street Volume:             | 885         |    |        |             |    |        |              |     |        |              |     |        |
| Minor Approach Volume:           | 95          |    |        |             |    |        |              |     |        |              |     |        |
| Minor Approach Volume Threshold: | 252         |    |        |             |    |        |              |     |        |              |     |        |

Sutter Medical Center  
EXISTING PLUS TRINITY  
PM Peak Hour

Peak Hour Delay Signal Warrant Report

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Intersection #6395 27th St & N St

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Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:    | North Bound |    |    | South Bound |   |   | East Bound   |     |    | West Bound   |   |   |   |   |   |   |   |   |   |
|--------------|-------------|----|----|-------------|---|---|--------------|-----|----|--------------|---|---|---|---|---|---|---|---|---|
| Movement:    | L           | T  | R  | L           | T | R | L            | T   | R  | L            | T | R |   |   |   |   |   |   |   |
| Control:     | Stop Sign   |    |    | Stop Sign   |   |   | Uncontrolled |     |    | Uncontrolled |   |   |   |   |   |   |   |   |   |
| Lanes:       | 0           | 0  | 1  | 0           | 0 | 1 | 0            | 0   | 0  | 0            | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Final Vol.:  | 0           | 23 | 17 | 95          | 9 | 0 | 16           | 713 | 18 | 0            | 0 | 0 | 0 | 0 | 0 | 0 |   |   |   |
| ApproachDel: | 13.9        |    |    | 8.6         |   |   | xxxxxxx      |     |    | xxxxxxx      |   |   |   |   |   |   |   |   |   |

Approach[northbound] [lanes=1] [control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.2]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=40]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=3][total volume=891]  
SUCCEED - Total volume greater than or equal to 650 for intersection  
with less than four approaches.

Approach[southbound] [lanes=1] [control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.2]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=104]  
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=3][total volume=891]  
SUCCEED - Total volume greater than or equal to 650 for intersection  
with less than four approaches.



Sutter Medical Center  
EXISTING PLUS TRINITY  
PM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

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Intersection #6395 27th St & N St

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Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:                        | North Bound |   |    |   | South Bound |    |   |   | East Bound   |   |     |   | West Bound   |   |    |   |   |   |   |   |
|----------------------------------|-------------|---|----|---|-------------|----|---|---|--------------|---|-----|---|--------------|---|----|---|---|---|---|---|
| Movement:                        | L           | - | T  | - | R           | L  | - | T | -            | R | L   | - | T            | - | R  | L | - | T | - | R |
| Control:                         | Stop Sign   |   |    |   | Stop Sign   |    |   |   | Uncontrolled |   |     |   | Uncontrolled |   |    |   |   |   |   |   |
| Lanes:                           | 0           | 0 | 0  | 1 | 0           | 0  | 1 | 0 | 0            | 0 | 0   | 1 | 1            | 1 | 0  | 0 | 0 | 0 | 0 | 0 |
| Final Vol.:                      | 0           |   | 23 |   | 17          | 95 |   | 9 |              | 0 | 16  |   | 713          |   | 18 | 0 |   | 0 |   | 0 |
| Major Street Volume:             |             |   |    |   |             |    |   |   |              |   | 747 |   |              |   |    |   |   |   |   |   |
| Minor Approach Volume:           |             |   |    |   |             |    |   |   |              |   | 104 |   |              |   |    |   |   |   |   |   |
| Minor Approach Volume Threshold: |             |   |    |   |             |    |   |   |              |   | 385 |   |              |   |    |   |   |   |   |   |

Sutter Medical Center  
EXISTING PLUS TRINITY  
PM Peak Hour

Peak Hour Delay Signal Warrant Report

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Intersection #6396 Capitol Ave & 27th St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:    | North Bound |    |        | South Bound |   |        | East Bound   |     |        | West Bound   |     |        |
|--------------|-------------|----|--------|-------------|---|--------|--------------|-----|--------|--------------|-----|--------|
| Movement:    | L           | T  | R      | L           | T | R      | L            | T   | R      | L            | T   | R      |
| Control:     | Stop Sign   |    |        | Stop Sign   |   |        | Uncontrolled |     |        | Uncontrolled |     |        |
| Lanes:       | 0           | 0  | 1! 0 0 | 0           | 0 | 1! 0 0 | 0            | 0   | 1! 0 0 | 0            | 0   | 1! 0 0 |
| Final Vol.:  | 8           | 11 | 27     | 26          | 7 | 5      | 6            | 420 | 6      | 20           | 494 | 5      |
| ApproachDel: | 16.0        |    |        | 23.4        |   |        | xxxxxx       |     |        | xxxxxx       |     |        |

Approach[northbound][lanes=1][control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.2]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=46]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=4][total volume=1035]  
SUCCEED - Total volume greater than or equal to 800 for intersection  
with four or more approaches.

Approach[southbound][lanes=1][control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.2]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=38]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=4][total volume=1035]  
SUCCEED - Total volume greater than or equal to 800 for intersection  
with four or more approaches.

Sutter Medical Center  
EXISTING PLUS TRINITY  
PM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

\*\*\*\*\*  
Intersection #6396 Capitol Ave & 27th St  
\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:                        | North Bound |    |        | South Bound |   |        | East Bound   |     |        | West Bound   |     |        |
|----------------------------------|-------------|----|--------|-------------|---|--------|--------------|-----|--------|--------------|-----|--------|
| Movement:                        | L           | T  | R      | L           | T | R      | L            | T   | R      | L            | T   | R      |
| Control:                         | Stop Sign   |    |        | Stop Sign   |   |        | Uncontrolled |     |        | Uncontrolled |     |        |
| Lanes:                           | 0           | 0  | 1! 0 0 | 0           | 0 | 1! 0 0 | 0            | 0   | 1! 0 0 | 0            | 0   | 1! 0 0 |
| Final Vol.:                      | 8           | 11 | 27     | 26          | 7 | 5      | 6            | 420 | 6      | 20           | 494 | 5      |
| Major Street Volume:             | 951         |    |        |             |   |        |              |     |        |              |     |        |
| Minor Approach Volume:           | 46          |    |        |             |   |        |              |     |        |              |     |        |
| Minor Approach Volume Threshold: | 233         |    |        |             |   |        |              |     |        |              |     |        |

Sutter Medical Center  
EXISTING PLUS TRINITY  
PM Peak Hour

Peak Hour Delay Signal Warrant Report

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Intersection #6397 27th St & L St

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Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:    | North Bound |   |   |   | South Bound |   |   |   | East Bound   |   |   |   | West Bound   |     |   |   |   |
|--------------|-------------|---|---|---|-------------|---|---|---|--------------|---|---|---|--------------|-----|---|---|---|
| Movement:    | L           | T | R |   | L           | T | R |   | L            | T | R |   | L            | T   | R |   |   |
| Control:     | Stop Sign   |   |   |   | Stop Sign   |   |   |   | Uncontrolled |   |   |   | Uncontrolled |     |   |   |   |
| Lanes:       | 1           | 0 | 0 | 0 | 0           | 0 | 0 | 0 | 0            | 0 | 0 | 0 | 0            | 1   | 2 | 0 | 0 |
| Final Vol.:  | 26          | 0 | 0 | 0 | 0           | 0 | 0 | 0 | 0            | 0 | 0 | 0 | 14           | 483 | 0 | 0 |   |
| ApproachDel: | 9.7         |   |   |   | xxxxxx      |   |   |   | xxxxxx       |   |   |   | xxxxxx       |     |   |   |   |

Approach[northbound] [lanes=1] [control=Stop]

Signal Warrant Rule #1: [vehicle-hours=0.1]

FAIL - Vehicle-hours less than 4 for one lane approach.

Signal Warrant Rule #2: [approach volume=26]

FAIL - Approach volume less than 100 for one lane approach.

Signal Warrant Rule #3: [approach count=2][total volume=523]

FAIL - Total volume less than 650 for intersection  
with less than four approaches.

Sutter Medical Center  
EXISTING PLUS TRINITY  
PM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

\*\*\*\*\*  
Intersection #6397 27th St & L St  
\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:                        | North Bound |   |   |   | South Bound |   |   |   | East Bound   |   |   |   | West Bound   |     |   |   |
|----------------------------------|-------------|---|---|---|-------------|---|---|---|--------------|---|---|---|--------------|-----|---|---|
| Movement:                        | L           | T | R |   | L           | T | R |   | L            | T | R |   | L            | T   | R |   |
| Control:                         | Stop Sign   |   |   |   | Stop Sign   |   |   |   | Uncontrolled |   |   |   | Uncontrolled |     |   |   |
| Lanes:                           | 1           | 0 | 0 | 0 | 0           | 0 | 0 | 0 | 0            | 0 | 0 | 0 | 0            | 1   | 2 | 0 |
| Final Vol.:                      | 26          | 0 | 0 | 0 | 0           | 0 | 0 | 0 | 0            | 0 | 0 | 0 | 14           | 483 | 0 | 0 |
| Major Street Volume:             |             |   |   |   |             |   |   |   | 497          |   |   |   |              |     |   |   |
| Minor Approach Volume:           |             |   |   |   |             |   |   |   | 26           |   |   |   |              |     |   |   |
| Minor Approach Volume Threshold: | 526         |   |   |   |             |   |   |   |              |   |   |   |              |     |   |   |

Sutter Medical Center  
EXISTING PLUS TRINITY  
PM Peak Hour

Level Of Service Computation Report  
2000 HCM 4-Way Stop Method (Base Volume Alternative)

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Intersection #3434 26th St & N St

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.374  
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 10.1  
Optimal Cycle: 0 Level Of Service: B

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| Approach:   | North Bound |   |   | South Bound |   |   | East Bound |   |   | West Bound |   |   |
|-------------|-------------|---|---|-------------|---|---|------------|---|---|------------|---|---|
| Movement:   | L           | T | R | L           | T | R | L          | T | R | L          | T | R |
| Control:    | Stop Sign   |   |   | Stop Sign   |   |   | Stop Sign  |   |   | Stop Sign  |   |   |
| Rights:     | Include     |   |   | Include     |   |   | Include    |   |   | Include    |   |   |
| Min. Green: | 0           | 0 | 0 | 0           | 0 | 0 | 0          | 0 | 0 | 0          | 0 | 0 |
| Lanes:      | 0           | 0 | 1 | 0           | 1 | 0 | 0          | 1 | 1 | 0          | 0 | 0 |

| Volume Module: | North Bound |      |      | South Bound |      |      | East Bound |      |      | West Bound |      |      |
|----------------|-------------|------|------|-------------|------|------|------------|------|------|------------|------|------|
| Base Vol:      | 0           | 52   | 20   | 17          | 41   | 0    | 43         | 755  | 19   | 0          | 0    | 0    |
| Growth Adj:    | 1.00        | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Initial Bse:   | 0           | 52   | 20   | 17          | 41   | 0    | 43         | 755  | 19   | 0          | 0    | 0    |
| User Adj:      | 1.00        | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| PHF Adj:       | 1.00        | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| PHF Volume:    | 0           | 52   | 20   | 17          | 41   | 0    | 43         | 755  | 19   | 0          | 0    | 0    |
| Reduct Vol:    | 0           | 0    | 0    | 0           | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Reduced Vol:   | 0           | 52   | 20   | 17          | 41   | 0    | 43         | 755  | 19   | 0          | 0    | 0    |
| PCE Adj:       | 1.00        | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| MLF Adj:       | 1.00        | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Final Vol.:    | 0           | 52   | 20   | 17          | 41   | 0    | 43         | 755  | 19   | 0          | 0    | 0    |

| Saturation Flow Module: | North Bound |      |      | South Bound |      |      | East Bound |      |      | West Bound |      |      |
|-------------------------|-------------|------|------|-------------|------|------|------------|------|------|------------|------|------|
| Adjustment:             | 1.00        | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Lanes:                  | 0.00        | 0.72 | 0.28 | 0.29        | 0.71 | 0.00 | 0.16       | 2.77 | 0.07 | 0.00       | 0.00 | 0.00 |
| Final Sat.:             | 0           | 478  | 184  | 185         | 447  | 0    | 115        | 2047 | 52   | 0          | 0    | 0    |

| Capacity Analysis Module: | North Bound |      |      | South Bound |      |      | East Bound |      |      | West Bound |      |      |
|---------------------------|-------------|------|------|-------------|------|------|------------|------|------|------------|------|------|
| Vol/Sat:                  | xxxx        | 0.11 | 0.11 | 0.09        | 0.09 | xxxx | 0.37       | 0.37 | 0.36 | xxxx       | xxxx | xxxx |
| Crit Moves:               | ****        |      |      | ****        |      |      | ****       |      |      | ****       |      |      |
| Delay/Veh:                | 0.0         | 8.8  | 8.8  | 9.0         | 9.0  | 0.0  | 10.5       | 10.3 | 10.2 | 0.0        | 0.0  | 0.0  |
| Delay Adj:                | 1.00        | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| AdjDel/Veh:               | 0.0         | 8.8  | 8.8  | 9.0         | 9.0  | 0.0  | 10.5       | 10.3 | 10.2 | 0.0        | 0.0  | 0.0  |
| LOS by Move:              | *           | A    | A    | A           | A    | *    | B          | B    | B    | *          | *    | *    |
| ApproachDel:              | 8.8         |      |      | 9.0         |      |      | 10.3       |      |      | xxxxxxx    |      |      |
| Delay Adj:                | 1.00        |      |      | 1.00        |      |      | 1.00       |      |      | xxxxxxx    |      |      |
| ApprAdjDel:               | 8.8         |      |      | 9.0         |      |      | 10.3       |      |      | xxxxxxx    |      |      |
| LOS by Appr:              | A           |      |      | A           |      |      | B          |      |      | *          |      |      |

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Sutter Medical Center
EXISTING PLUS TRINITY
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #5800 26th St & K St

\*\*\*\*\*

Average Delay (sec/veh): 3.4 Worst Case Level Of Service: C[ 20.8]

\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module:

Table with 13 columns representing different traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module:

Table with 13 columns for critical gap and follow-up times across different movements.

Capacity Module:

Table with 13 columns for capacity-related metrics like Conflict Vol, Potent Cap, Move Cap, etc.

Level Of Service Module:

Table with 13 columns for level of service metrics like Queue, Stopped Del, LOS by Move, etc.

Sutter Medical Center
EXISTING PLUS TRINITY
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

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Intersection #6395 27th St & N St

\*\*\*\*\*

Average Delay (sec/veh): 1.8 Worst Case Level Of Service: B[ 13.9]

\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns representing different movement directions and 7 rows for various volume adjustments like Base Vol, Growth Adj, etc.

Critical Gap Module: Table with 12 columns and 2 rows for Critical Gp and FollowUpTim.

Capacity Module: Table with 12 columns and 4 rows for Capacity-related metrics like Cnflct Vol, Potent Cap, etc.

Level Of Service Module: Table with 12 columns and 8 rows for Queue, Stopped Del, LOS, Movement, Shared Cap, etc.



Sutter Medical Center  
EXISTING PLUS TRINITY  
PM Peak Hour

Level Of Service Computation Report  
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*  
Intersection #6396 Capitol Ave & 27th St  
\*\*\*\*\*

Average Delay (sec/veh): 1.8 Worst Case Level Of Service: C[ 23.4]

| Approach: | North Bound |   |    | South Bound |   |    | East Bound   |   |   | West Bound   |   |    |   |   |
|-----------|-------------|---|----|-------------|---|----|--------------|---|---|--------------|---|----|---|---|
| Movement: | L           | T | R  | L           | T | R  | L            | T | R | L            | T | R  |   |   |
| Control:  | Stop Sign   |   |    | Stop Sign   |   |    | Uncontrolled |   |   | Uncontrolled |   |    |   |   |
| Rights:   | Include     |   |    | Include     |   |    | Include      |   |   | Include      |   |    |   |   |
| Lanes:    | 0           | 0 | 1! | 0           | 0 | 1! | 0            | 0 | 0 | 0            | 0 | 1! | 0 | 0 |

| Volume Module: | North Bound |      |      | South Bound |      |      | East Bound |      |      | West Bound |      |      |
|----------------|-------------|------|------|-------------|------|------|------------|------|------|------------|------|------|
| Base Vol:      | 8           | 11   | 27   | 26          | 7    | 5    | 6          | 420  | 6    | 20         | 494  | 5    |
| Growth Adj:    | 1.00        | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Initial Bse:   | 8           | 11   | 27   | 26          | 7    | 5    | 6          | 420  | 6    | 20         | 494  | 5    |
| User Adj:      | 1.00        | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| PHF Adj:       | 1.00        | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| PHF Volume:    | 8           | 11   | 27   | 26          | 7    | 5    | 6          | 420  | 6    | 20         | 494  | 5    |
| Reduct Vol:    | 0           | 0    | 0    | 0           | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Final Vol.:    | 8           | 11   | 27   | 26          | 7    | 5    | 6          | 420  | 6    | 20         | 494  | 5    |

| Critical Gap Module: | North Bound |     |     | South Bound |     |     | East Bound |      |       | West Bound |      |       |
|----------------------|-------------|-----|-----|-------------|-----|-----|------------|------|-------|------------|------|-------|
| Critical Gp:         | 7.1         | 6.5 | 6.2 | 7.1         | 6.5 | 6.2 | 4.1        | xxxx | xxxxx | 4.1        | xxxx | xxxxx |
| FollowUpTim:         | 3.5         | 4.0 | 3.3 | 3.5         | 4.0 | 3.3 | 2.2        | xxxx | xxxxx | 2.2        | xxxx | xxxxx |

| Capacity Module: | North Bound |      |      | South Bound |      |      | East Bound |      |       | West Bound |      |       |
|------------------|-------------|------|------|-------------|------|------|------------|------|-------|------------|------|-------|
| Cnflct Vol:      | 978         | 974  | 423  | 991         | 974  | 497  | 499        | xxxx | xxxxx | 426        | xxxx | xxxxx |
| Potent Cap.:     | 232         | 254  | 635  | 227         | 254  | 577  | 1075       | xxxx | xxxxx | 1144       | xxxx | xxxxx |
| Move Cap.:       | 221         | 248  | 635  | 206         | 248  | 577  | 1075       | xxxx | xxxxx | 1144       | xxxx | xxxxx |
| Volume/Cap:      | 0.04        | 0.04 | 0.04 | 0.13        | 0.03 | 0.01 | 0.01       | xxxx | xxxx  | 0.02       | xxxx | xxxx  |

| Level Of Service Module: | North Bound |      |       | South Bound |      |       | East Bound |      |       | West Bound |      |       |
|--------------------------|-------------|------|-------|-------------|------|-------|------------|------|-------|------------|------|-------|
| Queue:                   | xxxxx       | xxxx | xxxxx | xxxxx       | xxxx | xxxxx | 0.0        | xxxx | xxxxx | 0.1        | xxxx | xxxxx |
| Stopped Del:             | xxxxx       | xxxx | xxxxx | xxxxx       | xxxx | xxxxx | 8.4        | xxxx | xxxxx | 8.2        | xxxx | xxxxx |
| LOS by Move:             | *           | *    | *     | *           | *    | *     | A          | *    | *     | A          | *    | *     |
| Movement:                | LT          | LTR  | RT    | LT          | LTR  | RT    | LT         | LTR  | RT    | LT         | LTR  | RT    |
| Shared Cap.:             | xxxx        | 374  | xxxxx | xxxx        | 233  | xxxxx | xxxx       | xxxx | xxxxx | xxxx       | xxxx | xxxxx |
| SharedQueue:             | xxxxx       | 0.4  | xxxxx | xxxxx       | 0.6  | xxxxx | xxxxx      | xxxx | xxxxx | xxxxx      | xxxx | xxxxx |
| Shrd StpDel:             | xxxxx       | 16.0 | xxxxx | xxxxx       | 23.4 | xxxxx | xxxxx      | xxxx | xxxxx | xxxxx      | xxxx | xxxxx |
| Shared LOS:              | *           | C    | *     | *           | C    | *     | *          | *    | *     | *          | *    | *     |
| ApproachDel:             | 16.0        |      |       | 23.4        |      |       | xxxxxxx    |      |       | xxxxxxx    |      |       |
| ApproachLOS:             | C           |      |       | C           |      |       | *          |      |       | *          |      |       |

Sutter Medical Center
EXISTING PLUS TRINITY
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #6397 27th St & L St
\*\*\*\*\*

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: A[ 9.7]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns for traffic movements and 4 rows for Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Vol.

Critical Gap Module: Table with 13 columns for traffic movements and 2 rows for Critical Gp, FollowUpTim.

Capacity Module: Table with 13 columns for traffic movements and 4 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module: Table with 13 columns for traffic movements and 8 rows for Queue, Stopped Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd StpDel, Shared LOS, ApproachDel, ApproachLOS.

CUMULATIVE NO PROJECT  
WITH SMART PLAN

AM Peak Hour

Unsignalized Intersections

(am6)



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Sutter Medical Center  
CUMULATIVE NO PROJECT  
AM Peak Hour

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| Intersection                | Signal Warrant Summary Report |  | Future Met<br>[Del / Vol] |
|-----------------------------|-------------------------------|--|---------------------------|
|                             | Base Met<br>[Del / Vol]       |  |                           |
| #3434 26th St & N St        |                               |  |                           |
| #5800 26th St & K St        | No / No                       |  | ??? / ???                 |
| #6395 27th St & N St        | No / No                       |  | ??? / ???                 |
| #6396 Capitol Ave & 27th St | No / No                       |  | ??? / ???                 |
| #6397 27th St & L St        | No / No                       |  | ??? / ???                 |

Sutter Medical Center  
CUMULATIVE NO PROJECT  
AM Peak Hour

Peak Hour Delay Signal Warrant Report

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Intersection #5800 26th St & K St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:    | North Bound |    |        | South Bound |    |        | East Bound   |     |        | West Bound   |     |        |
|--------------|-------------|----|--------|-------------|----|--------|--------------|-----|--------|--------------|-----|--------|
| Movement:    | L           | T  | R      | L           | T  | R      | L            | T   | R      | L            | T   | R      |
| Control:     | Stop Sign   |    |        | Stop Sign   |    |        | Uncontrolled |     |        | Uncontrolled |     |        |
| Lanes:       | 0           | 0  | 1! 0 0 | 0           | 0  | 1! 0 0 | 0            | 0   | 1! 0 0 | 0            | 0   | 1! 0 0 |
| Final Vol.:  | 16          | 36 | 29     | 6           | 29 | 16     | 13           | 247 | 17     | 14           | 612 | 29     |
| ApproachDel: | 20.2        |    |        | 20.0        |    |        | xxxxxx       |     |        | xxxxxx       |     |        |

Approach[northbound][lanes=1][control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.5]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=81]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=4][total volume=1064]  
SUCCEED - Total volume greater than or equal to 800 for intersection  
with four or more approaches.

Approach[southbound][lanes=1][control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.3]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=51]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=4][total volume=1064]  
SUCCEED - Total volume greater than or equal to 800 for intersection  
with four or more approaches.

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 Sutter Medical Center  
 CUMULATIVE NO PROJECT  
 AM Peak Hour  
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Peak Hour Volume Signal Warrant Report [Urban]

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Intersection #5800 26th St & K St

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Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:   | North Bound |    |        | South Bound |    |        | East Bound   |     |        | West Bound   |     |        |
|-------------|-------------|----|--------|-------------|----|--------|--------------|-----|--------|--------------|-----|--------|
| Movement:   | L           | T  | R      | L           | T  | R      | L            | T   | R      | L            | T   | R      |
| Control:    | Stop Sign   |    |        | Stop Sign   |    |        | Uncontrolled |     |        | Uncontrolled |     |        |
| Lanes:      | 0           | 0  | 1! 0 0 | 0           | 0  | 1! 0 0 | 0            | 0   | 1! 0 0 | 0            | 0   | 1! 0 0 |
| Final Vol.: | 16          | 36 | 29     | 6           | 29 | 16     | 13           | 247 | 17     | 14           | 612 | 29     |

Major Street Volume: 932  
 Minor Approach Volume: 81  
 Minor Approach Volume Threshold: 238

Sutter Medical Center  
CUMULATIVE NO PROJECT  
AM Peak Hour

Peak Hour Delay Signal Warrant Report

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Intersection #6395 27th St & N St

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Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:    | North Bound |    |    |   | South Bound |   |   |   | East Bound   |     |   |   | West Bound   |   |   |   |   |   |   |   |
|--------------|-------------|----|----|---|-------------|---|---|---|--------------|-----|---|---|--------------|---|---|---|---|---|---|---|
| Movement:    | L           | T  | R  |   | L           | T | R |   | L            | T   | R |   | L            | T | R |   |   |   |   |   |
| Control:     | Stop Sign   |    |    |   | Stop Sign   |   |   |   | Uncontrolled |     |   |   | Uncontrolled |   |   |   |   |   |   |   |
| Lanes:       | 0           | 0  | 0  | 1 | 0           | 0 | 1 | 0 | 0            | 0   | 0 | 1 | 1            | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Final Vol.:  | 0           | 21 | 16 |   | 6           | 3 | 0 |   | 11           | 420 | 7 |   | 0            | 0 | 0 |   | 0 |   |   |   |
| ApproachDel: | 11.1        |    |    |   | 8.4         |   |   |   | xxxxxxx      |     |   |   | xxxxxxx      |   |   |   |   |   |   |   |

Approach[northbound][lanes=1][control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.1]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=37]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=3][total volume=484]  
FAIL - Total volume less than 650 for intersection  
with less than four approaches.

Approach[southbound][lanes=1][control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.0]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=9]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=3][total volume=484]  
FAIL - Total volume less than 650 for intersection  
with less than four approaches.



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 Sutter Medical Center  
 CUMULATIVE NO PROJECT  
 AM Peak Hour  
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Peak Hour Volume Signal Warrant Report [Urban]

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Intersection #6395 27th St & N St

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Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:                        | North Bound |   |    |   | South Bound |   |   |   | East Bound   |   |    |   | West Bound   |   |   |   |   |   |   |   |
|----------------------------------|-------------|---|----|---|-------------|---|---|---|--------------|---|----|---|--------------|---|---|---|---|---|---|---|
| Movement:                        | L           | - | T  | - | R           | L | - | T | -            | R | L  | - | T            | - | R | L | - | T | - | R |
| Control:                         | Stop Sign   |   |    |   | Stop Sign   |   |   |   | Uncontrolled |   |    |   | Uncontrolled |   |   |   |   |   |   |   |
| Lanes:                           | 0           | 0 | 0  | 1 | 0           | 0 | 1 | 0 | 0            | 0 | 0  | 1 | 1            | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Final Vol.:                      | 0           |   | 21 |   | 16          | 6 |   | 3 |              | 0 | 11 |   | 420          |   | 7 | 0 |   | 0 |   | 0 |
| Major Street Volume:             |             |   |    |   | 438         |   |   |   |              |   |    |   |              |   |   |   |   |   |   |   |
| Minor Approach Volume:           |             |   |    |   | 37          |   |   |   |              |   |    |   |              |   |   |   |   |   |   |   |
| Minor Approach Volume Threshold: |             |   |    |   | 569         |   |   |   |              |   |    |   |              |   |   |   |   |   |   |   |

Sutter Medical Center  
CUMULATIVE NO PROJECT  
AM Peak Hour

Peak Hour Delay Signal Warrant Report

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Intersection #6396 Capitol Ave & 27th St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:    | North Bound |    |      | South Bound |    |      | East Bound   |     |      | West Bound   |     |      |
|--------------|-------------|----|------|-------------|----|------|--------------|-----|------|--------------|-----|------|
| Movement:    | L           | T  | R    | L           | T  | R    | L            | T   | R    | L            | T   | R    |
| Control:     | Stop Sign   |    |      | Stop Sign   |    |      | Uncontrolled |     |      | Uncontrolled |     |      |
| Lanes:       | 0           | 0  | 1! 0 | 0           | 0  | 1! 0 | 0            | 0   | 1! 0 | 0            | 0   | 1! 0 |
| Final Vol.:  | 2           | 14 | 10   | 27          | 12 | 8    | 8            | 371 | 3    | 10           | 666 | 17   |
| ApproachDel: | 19.0        |    |      | 27.2        |    |      | xxxxxxx      |     |      | xxxxxxx      |     |      |

Approach[northbound][lanes=1][control=Stop]

Signal Warrant Rule #1: [vehicle-hours=0.1]

FAIL - Vehicle-hours less than 4 for one lane approach.

Signal Warrant Rule #2: [approach volume=26]

FAIL - Approach volume less than 100 for one lane approach.

Signal Warrant Rule #3: [approach count=4][total volume=1148]

SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[southbound][lanes=1][control=Stop]

Signal Warrant Rule #1: [vehicle-hours=0.4]

FAIL - Vehicle-hours less than 4 for one lane approach.

Signal Warrant Rule #2: [approach volume=47]

FAIL - Approach volume less than 100 for one lane approach.

Signal Warrant Rule #3: [approach count=4][total volume=1148]

SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Sutter Medical Center  
 CUMULATIVE NO PROJECT  
 AM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

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Intersection #6396 Capitol Ave & 27th St

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Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:                        | North Bound |    |        | South Bound |    |        | East Bound   |     |        | West Bound   |     |        |
|----------------------------------|-------------|----|--------|-------------|----|--------|--------------|-----|--------|--------------|-----|--------|
| Movement:                        | L           | T  | R      | L           | T  | R      | L            | T   | R      | L            | T   | R      |
| Control:                         | Stop Sign   |    |        | Stop Sign   |    |        | Uncontrolled |     |        | Uncontrolled |     |        |
| Lanes:                           | 0           | 0  | 1! 0 0 | 0           | 0  | 1! 0 0 | 0            | 0   | 1! 0 0 | 0            | 0   | 1! 0 0 |
| Final Vol.:                      | 2           | 14 | 10     | 27          | 12 | 8      | 8            | 371 | 3      | 10           | 666 | 17     |
| Major Street Volume:             |             |    |        |             |    |        | 1075         |     |        |              |     |        |
| Minor Approach Volume:           |             |    |        |             |    |        | 47           |     |        |              |     |        |
| Minor Approach Volume Threshold: |             |    |        |             |    |        | 200          |     |        |              |     |        |

Sutter Medical Center  
CUMULATIVE NO PROJECT  
AM Peak Hour

Peak Hour Delay Signal Warrant Report

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Intersection #6397 27th St & L St

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Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:    | North Bound |   |   |   | South Bound |   |   |   | East Bound   |   |   |   | West Bound   |     |   |   |
|--------------|-------------|---|---|---|-------------|---|---|---|--------------|---|---|---|--------------|-----|---|---|
| Movement:    | L           | T | R |   | L           | T | R |   | L            | T | R |   | L            | T   | R |   |
| Control:     | Stop Sign   |   |   |   | Stop Sign   |   |   |   | Uncontrolled |   |   |   | Uncontrolled |     |   |   |
| Lanes:       | 1           | 0 | 0 | 0 | 0           | 0 | 0 | 0 | 0            | 0 | 0 | 0 | 0            | 1   | 2 | 0 |
| Final Vol.:  | 34          | 0 | 0 |   | 0           | 0 | 0 |   | 0            | 0 | 0 |   | 44           | 958 | 0 |   |
| ApproachDel: | 11.6        |   |   |   | xxxxxxx     |   |   |   | xxxxxxx      |   |   |   | xxxxxxx      |     |   |   |

Approach[northbound] [lanes=1] [control=Stop]

Signal Warrant Rule #1: [vehicle-hours=0.1]

FAIL - Vehicle-hours less than 4 for one lane approach.

Signal Warrant Rule #2: [approach volume=34]

FAIL - Approach volume less than 100 for one lane approach.

Signal Warrant Rule #3: [approach count=2] [total volume=1036]

SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Sutter Medical Center  
CUMULATIVE NO PROJECT  
AM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

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Intersection #6397 27th St & L St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:   | North Bound |   |   |   | South Bound |   |   |   | East Bound   |   |   |   | West Bound   |     |   |   |   |
|-------------|-------------|---|---|---|-------------|---|---|---|--------------|---|---|---|--------------|-----|---|---|---|
| Movement:   | L           | T | R |   | L           | T | R |   | L            | T | R |   | L            | T   | R |   |   |
| Control:    | Stop Sign   |   |   |   | Stop Sign   |   |   |   | Uncontrolled |   |   |   | Uncontrolled |     |   |   |   |
| Lanes:      | 1           | 0 | 0 | 0 | 0           | 0 | 0 | 0 | 0            | 0 | 0 | 0 | 0            | 1   | 2 | 0 | 0 |
| Final Vol.: | 34          | 0 | 0 | 0 | 0           | 0 | 0 | 0 | 0            | 0 | 0 | 0 | 44           | 958 | 0 | 0 |   |

Major Street Volume: 1002

Minor Approach Volume: 34

Minor Approach Volume Threshold: 284

Sutter Medical Center
CUMULATIVE NO PROJECT
AM Peak Hour

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #3434 26th St & N St
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.187
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 8.4
Optimal Cycle: 0 Level Of Service: A
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Stop Sign), Rights (Include), Min. Green, and Lanes.

Volume Module: Table with 13 columns for different traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module: Table with 13 columns for saturation flow values and adjustment factors.

Capacity Analysis Module: Table with 13 columns for capacity analysis metrics like Vol/Sat, Crit Moves, Delay/Veh, etc.

\*\*\*\*\*

Sutter Medical Center
CUMULATIVE NO PROJECT
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #5800 26th St & K St
\*\*\*\*\*

Average Delay (sec/veh): 2.7 Worst Case Level Of Service: C[ 20.2]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns for traffic volumes and adjustment factors (Base Vol, Growth Adj, etc.).

Critical Gap Module: Table with 13 columns for critical gap and follow-up times.

Capacity Module: Table with 13 columns for conflict volumes, potential capacity, and volume/capacity ratios.

Level Of Service Module: Table with 13 columns for queue lengths, stopped delay, LOS by movement, and shared queue/delay metrics.

Sutter Medical Center
CUMULATIVE NO PROJECT
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #6395 27th St & N St
\*\*\*\*\*

Average Delay (sec/veh): 1.2 Worst Case Level Of Service: B[ 11.1]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns for volume and adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Vol.

Critical Gap Module: Table with 13 columns for gap and follow-up times. Rows include Critical Gp and FollowUpTim.

Capacity Module: Table with 13 columns for capacity and conflict volume. Rows include Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module: Table with 13 columns for queue, delay, and LOS. Rows include Queue, Stopped Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd StpDel, Shared LOS, ApproachDel, and ApproachLOS.



Sutter Medical Center
CUMULATIVE NO PROJECT
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #6396 Capitol Ave & 27th St
\*\*\*\*\*

Average Delay (sec/veh): 1.7 Worst Case Level Of Service: D[ 27.2]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns for volume metrics (Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Vol) across four directions.

Critical Gap Module: Table with 13 columns for gap metrics (Critical Gp, FollowUpTim) across four directions.

Capacity Module: Table with 13 columns for capacity metrics (Cnflct Vol, Potent Cap., Move Cap., Volume/Cap) across four directions.

Level Of Service Module: Table with 13 columns for LOS metrics (Queue, Stopped Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd StpDel, Shared LOS, ApproachDel, ApproachLOS) across four directions.

Sutter Medical Center
CUMULATIVE NO PROJECT
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #6397 27th St & L St
\*\*\*\*\*

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: B[ 11.6]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns for various volume and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 13 columns for critical gap and follow-up time values.

Capacity Module: Table with 13 columns for conflict volume, potential capacity, move capacity, and volume/capacity.

Level Of Service Module: Table with 13 columns for queue, stopped delay, LOS by move, shared capacity, and approach delay.

CUMULATIVE NO PROJECT  
WITH SMART PLAN

PM Peak Hour

Unsignalized Intersections

(pm6)



Sutter Medical Center  
CUMULATIVE NO PROJECT  
PM Peak Hour

| Intersection                | Signal Warrant Summary Report |  | Future Met<br>[Del / Vol] |
|-----------------------------|-------------------------------|--|---------------------------|
|                             | Base Met<br>[Del / Vol]       |  |                           |
| #3434 26th St & N St        |                               |  |                           |
| #5800 26th St & K St        | No / No                       |  | ??? / ???                 |
| #6395 27th St & N St        | No / No                       |  | ??? / ???                 |
| #6396 Capitol Ave & 27th St | No / No                       |  | ??? / ???                 |
| #6397 27th St & L St        | No / No                       |  | ??? / ???                 |

Sutter Medical Center  
CUMULATIVE NO PROJECT  
PM Peak Hour

Peak Hour Delay Signal Warrant Report

\*\*\*\*\*  
Intersection #5800 26th St & K St  
\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:    | North Bound |    |        | South Bound |    |        | East Bound   |     |        | West Bound   |     |        |
|--------------|-------------|----|--------|-------------|----|--------|--------------|-----|--------|--------------|-----|--------|
| Movement:    | L           | T  | R      | L           | T  | R      | L            | T   | R      | L            | T   | R      |
| Control:     | Stop Sign   |    |        | Stop Sign   |    |        | Uncontrolled |     |        | Uncontrolled |     |        |
| Lanes:       | 0           | 0  | 1! 0 0 | 0           | 0  | 1! 0 0 | 0            | 0   | 1! 0 0 | 0            | 0   | 1! 0 0 |
| Final Vol.:  | 5           | 57 | 21     | 15          | 46 | 31     | 15           | 454 | 19     | 27           | 609 | 30     |
| ApproachDel: | 30.6        |    |        | 7.6         |    |        | xxxxxxx      |     |        | xxxxxxx      |     |        |

-----  
Approach[northbound][lanes=1][control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.7]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=83]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=4][total volume=1329]  
SUCCEED - Total volume greater than or equal to 800 for intersection  
with four or more approaches.  
-----

-----  
Approach[southbound][lanes=1][control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.2]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=92]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=4][total volume=1329]  
SUCCEED - Total volume greater than or equal to 800 for intersection  
with four or more approaches.  
-----

Sutter Medical Center  
 CUMULATIVE NO PROJECT  
 PM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

\*\*\*\*\*

Intersection #5800 26th St & K St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:   | North Bound |    |        | South Bound |    |        | East Bound   |     |        | West Bound   |     |        |
|-------------|-------------|----|--------|-------------|----|--------|--------------|-----|--------|--------------|-----|--------|
| Movement:   | L           | T  | R      | L           | T  | R      | L            | T   | R      | L            | T   | R      |
| Control:    | Stop Sign   |    |        | Stop Sign   |    |        | Uncontrolled |     |        | Uncontrolled |     |        |
| Lanes:      | 0           | 0  | 1! 0 0 | 0           | 0  | 1! 0 0 | 0            | 0   | 1! 0 0 | 0            | 0   | 1! 0 0 |
| Final Vol.: | 5           | 57 | 21     | 15          | 46 | 31     | 15           | 454 | 19     | 27           | 609 | 30     |

Major Street Volume: 1154

Minor Approach Volume: 92

Minor Approach Volume Threshold: 181

Sutter Medical Center  
CUMULATIVE NO PROJECT  
PM Peak Hour

Peak Hour Delay Signal Warrant Report

\*\*\*\*\*

Intersection #6395 27th St & N St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:    | North Bound |    |    |   | South Bound |    |   |   | East Bound   |   |    |     | West Bound   |   |   |   |   |   |   |   |
|--------------|-------------|----|----|---|-------------|----|---|---|--------------|---|----|-----|--------------|---|---|---|---|---|---|---|
| Movement:    | L           | -  | T  | - | R           | L  | - | T | -            | R | L  | -   | T            | - | R | L | - | T | - | R |
| Control:     | Stop Sign   |    |    |   | Stop Sign   |    |   |   | Uncontrolled |   |    |     | Uncontrolled |   |   |   |   |   |   |   |
| Lanes:       | 0           | 0  | 0  | 1 | 0           | 0  | 1 | 0 | 0            | 0 | 0  | 1   | 1            | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Final Vol.:  | 0           | 21 | 13 |   |             | 20 | 7 | 0 |              |   | 15 | 874 | 24           |   |   | 0 | 0 | 0 |   |   |
| ApproachDel: | 16.2        |    |    |   | 13.7        |    |   |   | xxxxxxx      |   |    |     | xxxxxxx      |   |   |   |   |   |   |   |

-----|-----|-----|-----|-----|

Approach[northbound][lanes=1][control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.2]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=34]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=3][total volume=974]  
SUCCEED - Total volume greater than or equal to 650 for intersection  
with less than four approaches.

-----|-----|-----|-----|-----|

Approach[southbound][lanes=1][control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.1]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=27]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=3][total volume=974]  
SUCCEED - Total volume greater than or equal to 650 for intersection  
with less than four approaches.



Sutter Medical Center  
 CUMULATIVE NO PROJECT  
 PM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

\*\*\*\*\*

Intersection #6395 27th St & N St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:   | North Bound |   |    |   | South Bound |    |   |   | East Bound   |   |    |   | West Bound   |   |    |   |   |   |   |   |
|-------------|-------------|---|----|---|-------------|----|---|---|--------------|---|----|---|--------------|---|----|---|---|---|---|---|
| Movement:   | L           | - | T  | - | R           | L  | - | T | -            | R | L  | - | T            | - | R  | L | - | T | - | R |
| Control:    | Stop Sign   |   |    |   | Stop Sign   |    |   |   | Uncontrolled |   |    |   | Uncontrolled |   |    |   |   |   |   |   |
| Lanes:      | 0           | 0 | 0  | 1 | 0           | 0  | 1 | 0 | 0            | 0 | 0  | 1 | 1            | 1 | 0  | 0 | 0 | 0 | 0 | 0 |
| Final Vol.: | 0           |   | 21 |   | 13          | 20 |   | 7 |              | 0 | 15 |   | 874          |   | 24 | 0 |   | 0 |   | 0 |

Major Street Volume: 913  
 Minor Approach Volume: 34  
 Minor Approach Volume Threshold: 316

Sutter Medical Center  
CUMULATIVE NO PROJECT  
PM Peak Hour

Peak Hour Delay Signal Warrant Report

\*\*\*\*\*

Intersection #6396 Capitol Ave & 27th St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:    | North Bound |    |        | South Bound |   |        | East Bound   |     |        | West Bound   |     |        |
|--------------|-------------|----|--------|-------------|---|--------|--------------|-----|--------|--------------|-----|--------|
| Movement:    | L           | T  | R      | L           | T | R      | L            | T   | R      | L            | T   | R      |
| Control:     | Stop Sign   |    |        | Stop Sign   |   |        | Uncontrolled |     |        | Uncontrolled |     |        |
| Lanes:       | 0           | 0  | 1! 0 0 | 0           | 0 | 1! 0 0 | 0            | 0   | 1! 0 0 | 0            | 0   | 1! 0 0 |
| Final Vol.:  | 6           | 14 | 18     | 26          | 7 | 7      | 6            | 654 | 7      | 9            | 686 | 3      |
| ApproachDel: | 26.9        |    |        | 44.8        |   |        | xxxxxxx      |     |        | xxxxxxx      |     |        |

Approach[northbound][lanes=1][control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.3]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=38]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=4][total volume=1443]  
SUCCEED - Total volume greater than or equal to 800 for intersection  
with four or more approaches.

Approach[southbound][lanes=1][control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.5]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=40]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=4][total volume=1443]  
SUCCEED - Total volume greater than or equal to 800 for intersection  
with four or more approaches.

Sutter Medical Center  
CUMULATIVE NO PROJECT  
PM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

\*\*\*\*\*

Intersection #6396 Capitol Ave & 27th St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:   | North Bound |    |        | South Bound |   |        | East Bound   |     |        | West Bound   |     |        |
|-------------|-------------|----|--------|-------------|---|--------|--------------|-----|--------|--------------|-----|--------|
| Movement:   | L           | T  | R      | L           | T | R      | L            | T   | R      | L            | T   | R      |
| Control:    | Stop Sign   |    |        | Stop Sign   |   |        | Uncontrolled |     |        | Uncontrolled |     |        |
| Lanes:      | 0           | 0  | 1! 0 0 | 0           | 0 | 1! 0 0 | 0            | 0   | 1! 0 0 | 0            | 0   | 1! 0 0 |
| Final Vol.: | 6           | 14 | 18     | 26          | 7 | 7      | 6            | 654 | 7      | 9            | 686 | 3      |

Major Street Volume: 1365  
Minor Approach Volume: 40  
Minor Approach Volume Threshold: 136

Sutter Medical Center  
CUMULATIVE NO PROJECT  
PM Peak Hour

Peak Hour Delay Signal Warrant Report

\*\*\*\*\*  
Intersection #6397 27th St & L St  
\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:    | North Bound |   |   |   | South Bound |   |   |   | East Bound   |   |   |   | West Bound   |     |   |   |
|--------------|-------------|---|---|---|-------------|---|---|---|--------------|---|---|---|--------------|-----|---|---|
| Movement:    | L           | T | R |   | L           | T | R |   | L            | T | R |   | L            | T   | R |   |
| Control:     | Stop Sign   |   |   |   | Stop Sign   |   |   |   | Uncontrolled |   |   |   | Uncontrolled |     |   |   |
| Lanes:       | 1           | 0 | 0 | 0 | 0           | 0 | 0 | 0 | 0            | 0 | 0 | 0 | 0            | 1   | 2 | 0 |
| Final Vol.:  | 21          | 0 | 0 | 0 | 0           | 0 | 0 | 0 | 0            | 0 | 0 | 0 | 15           | 743 | 0 | 0 |
| ApproachDel: | 10.2        |   |   |   | xxxxxxx     |   |   |   | xxxxxxx      |   |   |   | xxxxxxx      |     |   |   |

Approach[northbound] [lanes=1] [control=Stop]

Signal Warrant Rule #1: [vehicle-hours=0.1]

FAIL - Vehicle-hours less than 4 for one lane approach.

Signal Warrant Rule #2: [approach volume=21]

FAIL - Approach volume less than 100 for one lane approach.

Signal Warrant Rule #3: [approach count=2] [total volume=779]

SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Sutter Medical Center  
 CUMULATIVE NO PROJECT  
 PM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

\*\*\*\*\*

Intersection #6397 27th St & L St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:   | North Bound |   |   | South Bound |   |   | East Bound   |   |   | West Bound   |     |   |
|-------------|-------------|---|---|-------------|---|---|--------------|---|---|--------------|-----|---|
| Movement:   | L           | T | R | L           | T | R | L            | T | R | L            | T   | R |
| Control:    | Stop Sign   |   |   | Stop Sign   |   |   | Uncontrolled |   |   | Uncontrolled |     |   |
| Lanes:      | 1           | 0 | 0 | 0           | 0 | 0 | 0            | 0 | 0 | 0            | 1   | 2 |
| Final Vol.: | 21          | 0 | 0 | 0           | 0 | 0 | 0            | 0 | 0 | 15           | 743 | 0 |

Major Street Volume: 758  
 Minor Approach Volume: 21  
 Minor Approach Volume Threshold: 380

Sutter Medical Center
CUMULATIVE NO PROJECT
PM Peak Hour

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #3434 26th St & N St
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.411
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 10.6
Optimal Cycle: 0 Level Of Service: B
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Stop Sign), Rights (Include), Min. Green, and Lanes.

Volume Module: Table with 13 columns for volume and adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Vol.

Saturation Flow Module: Table with 13 columns for saturation flow factors. Rows include Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 13 columns for capacity analysis factors. Rows include Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, and LOS by Appr.

\*\*\*\*\*

Sutter Medical Center
CUMULATIVE NO PROJECT
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #5800 26th St & K St
\*\*\*\*\*

Average Delay (sec/veh): 2.7 Worst Case Level Of Service: D [ 30.6]

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Uncontrolled Uncontrolled
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 0 1! 0 0 0 0 1! 0 0 0 0 1! 0 0

Volume Module:
Base Vol: 5 57 21 15 46 31 15 454 19 27 609 30
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 5 57 21 15 46 31 15 454 19 27 609 30
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 5 57 21 15 46 31 15 454 19 27 609 30
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Final Vol.: 5 57 21 15 46 31 15 454 19 27 609 30

Critical Gap Module:
Critical Gp: 7.1 6.5 6.2 0.0 0.0 0.0 0.0 xxxx xxxxxx 0.0 xxxx xxxxxx
FollowUpTim: 3.5 4.0 3.3 3.5 4.0 3.3 2.2 xxxx xxxxxx 2.2 xxxx xxxxxx

Capacity Module:
Cnflct Vol: 1210 1187 464 1210 1181 624 639 xxxx xxxxxx 473 xxxx xxxxxx
Potent Cap.: 161 190 603 1750 1616 1432 1977 xxxx xxxxxx 1884 xxxx xxxxxx
Move Cap.: 151 186 603 1268 1580 1432 1977 xxxx xxxxxx 1884 xxxx xxxxxx
Volume/Cap: 0.03 0.31 0.03 0.01 0.03 0.02 0.01 xxxx xxxxxx 0.01 xxxx xxxxxx

Level Of Service Module:
Queue: xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx 0.0 xxxxx xxxxxx 0.0 xxxxx xxxxxx
Stopped Del: xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx 6.8 xxxxx xxxxxx 6.9 xxxxx xxxxxx
LOS by Move: \* \* \* \* \* A \* \* A \* \*
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx 222 xxxxxx xxxxx 1470 xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
SharedQueue: xxxxxx 1.6 xxxxxx xxxxxx 0.2 xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx
Shrd StpDel: xxxxxx 30.6 xxxxxx xxxxxx 7.6 xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx
Shared LOS: \* D \* \* A \* \* \* \*
ApproachDel: 30.6 7.6 xxxxxxxx xxxxxxxx
ApproachLOS: D A \* \*

Sutter Medical Center
CUMULATIVE NO PROJECT
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #6395 27th St & N St

\*\*\*\*\*

Average Delay (sec/veh): 1.1 Worst Case Level Of Service: C[ 16.2]

\*\*\*\*\*

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Uncontrolled Uncontrolled
Rights: Include Include Include Include
Lanes: 0 0 0 1 0 0 1 0 0 0 0 1 1 1 0 0 0 0 0 0

Volume Module:

Base Vol: 0 21 13 20 7 0 15 874 24 0 0 0
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 0 21 13 20 7 0 15 874 24 0 0 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 0 21 13 20 7 0 15 874 24 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Final Vol.: 0 21 13 20 7 0 15 874 24 0 0 0

Critical Gap Module:

Critical Gp:xxxxx 6.5 6.2 7.1 6.5 xxxxxx 4.1 xxxxx xxxxxx xxxxxx xxxxx xxxxxx
FollowUpTim:xxxxx 4.0 3.3 3.5 4.0 xxxxxx 2.2 xxxxx xxxxxx xxxxxx xxxxx xxxxxx

Capacity Module:

Cnflct Vol: xxxxx 916 303 332 928 xxxxxx 0 xxxxx xxxxxx xxxxx xxxxx xxxxxx
Potent Cap.: xxxxx 274 741 625 270 xxxxxx 900 xxxxx xxxxxx xxxxx xxxxx xxxxxx
Move Cap.: xxxxx 270 741 570 265 xxxxxx 900 xxxxx xxxxxx xxxxx xxxxx xxxxxx
Volume/Cap: xxxxx 0.08 0.02 0.04 0.03 xxxxxx 0.02 xxxxx xxxxx xxxxx xxxxx xxxxxx

Level Of Service Module:

Queue: xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx 0.1 xxxxx xxxxxx xxxxxx xxxxx xxxxxx
Stopped Del:xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx 9.1 xxxxx xxxxxx xxxxxx xxxxx xxxxxx
LOS by Move: \* \* \* \* \* A \* \* \* \* \*
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx 356 440 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
SharedQueue:xxxxxx xxxxx 0.3 0.2 xxxxx xxxxxx 0.1 xxxxx xxxxxx xxxxxx xxxxx xxxxxx
Shrd StpDel:xxxxxx xxxxx 16.2 13.7 xxxxx xxxxxx 9.1 xxxxx xxxxxx xxxxxx xxxxx xxxxxx
Shared LOS: \* \* C B \* \* A \* \* \* \* \*
ApproachDel: 16.2 13.7 xxxxxxxx xxxxxxxx
ApproachLOS: C B \* \*



Sutter Medical Center
CUMULATIVE NO PROJECT
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #6396 Capitol Ave & 27th St
\*\*\*\*\*

Average Delay (sec/veh): 2.0 Worst Case Level Of Service: E[ 44.8]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns for traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Vol.

Critical Gap Module: Table with 12 columns for traffic movements. Rows include Critical Gp and FollowUpTim.

Capacity Module: Table with 12 columns for traffic movements. Rows include Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module: Table with 12 columns for traffic movements. Rows include Queue, Stopped Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd StpDel, Shared LOS, ApproachDel, and ApproachLOS.

Sutter Medical Center
CUMULATIVE NO PROJECT
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #6397 27th St & L St
\*\*\*\*\*

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: B[ 10.2]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns for traffic volumes and adjustments. Rows include Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Vol.

Critical Gap Module: Table with 13 columns for gap and follow-up times. Rows include Critical Gp and FollowUpTim.

Capacity Module: Table with 13 columns for capacity and conflict volumes. Rows include Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module: Table with 13 columns for queue, delay, and LOS. Rows include Queue, Stopped Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd StpDel, Shared LOS, ApproachDel, and ApproachLOS.

CUMULATIVE PLUS SUTTER PROJECT  
WITH SMART PLAN

AM Peak Hour

Unsignalized Intersections

(am7)



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Sutter Medical Center  
CUMULATIVE PLUS SUTTER PROJECT  
AM Peak Hour

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Scenario Report

Scenario: am7FUsp  
Command: am7FUsp  
Volume: am7FUsp  
Geometry: am7FUsp  
Impact Fee: Default Impact Fee  
Trip Generation: Default Trip Generation  
Trip Distribution: Default Trip Distribution  
Paths: Default Paths  
Routes: Default Routes  
Configuration: Default Configuration

Sutter Medical Center
CUMULATIVE PLUS SUTTER PROJECT
AM Peak Hour

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #3434 26th St & N St
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.202
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 8.5
Optimal Cycle: 0 Level Of Service: A
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 13 columns representing different traffic movements and 10 rows of volume and adjustment factors.

Saturation Flow Module: Table with 13 columns and 3 rows showing adjustment factors and saturation flow rates.

Capacity Analysis Module: Table with 13 columns and 10 rows showing delay, LOS, and approach delay metrics.

\*\*\*\*\*

Sutter Medical Center
CUMULATIVE PLUS SUTTER PROJECT
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #5800 26th St & K St
\*\*\*\*\*

Average Delay (sec/veh): 3.0 Worst Case Level Of Service: C[ 21.8]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns for traffic volumes and adjustment factors across four directions.

Critical Gap Module: Table with 13 columns for critical gap and follow-up times.

Capacity Module: Table with 13 columns for conflict volumes, potential capacity, and move capacity.

Level Of Service Module: Table with 13 columns for queue lengths, stopped delays, LOS by movement, and approach delays.

Sutter Medical Center
CUMULATIVE PLUS SUTTER PROJECT
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #6395 27th St & N St
\*\*\*\*\*

Average Delay (sec/veh): 3.6 Worst Case Level Of Service: B [ 12.9]

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Uncontrolled Uncontrolled
Rights: Include Include Include Include
Lanes: 0 0 0 1 0 0 1 0 0 0 0 1 1 1 0 0 0 0 0 0

Volume Module:
Base Vol: 0 41 15 32 11 0 70 356 6 0 0 0
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 0 41 15 32 11 0 70 356 6 0 0 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 0 41 15 32 11 0 70 356 6 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Final Vol.: 0 41 15 32 11 0 70 356 6 0 0 0

Critical Gap Module:
Critical Gp:xxxxx 6.5 6.2 7.1 6.5 xxxxxx 4.1 xxxxx xxxxxx xxxxxx xxxxx xxxxxx
FollowUpTim:xxxxx 4.0 3.3 3.5 4.0 xxxxxx 2.2 xxxxx xxxxxx xxxxxx xxxxx xxxxxx

Capacity Module:
Cnflct Vol: xxxxx 499 122 279 502 xxxxxx 0 xxxxx xxxxxx xxxxx xxxxx xxxxxx
Potent Cap.: xxxxx 476 935 677 474 xxxxxx 900 xxxxx xxxxxx xxxxx xxxxx xxxxxx
Move Cap.: xxxxx 438 935 581 436 xxxxxx 900 xxxxx xxxxxx xxxxx xxxxx xxxxxx
Volume/Cap: xxxxx 0.09 0.02 0.06 0.03 xxxxxx 0.08 xxxxx xxxxxx xxxxx xxxxx xxxxxx

Level Of Service Module:
Queue: xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx 0.3 xxxxx xxxxxx xxxxxx xxxxx xxxxxx
Stopped Del:xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx 9.3 xxxxx xxxxxx xxxxxx xxxxx xxxxxx
LOS by Move: \* \* \* \* \* \* \* \* \* \* \*
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx 510 535 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
SharedQueue:xxxxxx xxxxx 0.4 0.3 xxxxx xxxxxx 0.3 xxxxx xxxxxx xxxxxx xxxxx xxxxxx
Shrd StpDel:xxxxxx xxxxx 12.9 12.3 xxxxx xxxxxx 9.3 xxxxx xxxxxx xxxxxx xxxxx xxxxxx
Shared LOS: \* \* B B \* \* A \* \* \* \* \*
ApproachDel: 12.9 12.3 xxxxxxxx xxxxxxxx
ApproachLOS: B B \* \*



Sutter Medical Center
CUMULATIVE PLUS SUTTER PROJECT
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #6396 Capitol Ave & 27th St
\*\*\*\*\*

Average Delay (sec/veh): 7.2 Worst Case Level Of Service: E[ 46.1]

Table with columns for Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Lanes, Volume Module, and various volume/adjustment metrics.

Critical Gap Module: Table with columns for Critical Gp and FollowUpTim across four approaches.

Capacity Module: Table with columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap across four approaches.

Level Of Service Module: Table with columns for Queue, Stopped Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd StpDel, Shared LOS, ApproachDel, and ApproachLOS across four approaches.

Sutter Medical Center
CUMULATIVE PLUS SUTTER PROJECT
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #6397 27th St & L St
\*\*\*\*\*

Average Delay (sec/veh): 1.9 Worst Case Level Of Service: C[ 15.0]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns for traffic flow metrics. Rows include Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Vol.

Critical Gap Module: Table with 13 columns for gap metrics. Rows include Critical Gp and FollowUpTim.

Capacity Module: Table with 13 columns for capacity metrics. Rows include Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module: Table with 13 columns for LOS metrics. Rows include Queue, Stopped Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd StpDel, Shared LOS, ApproachDel, and ApproachLOS.

CUMULATIVE PLUS SUTTER PROJECT  
WITH SMART PLAN

PM Peak Hour

Unsignalized Intersections

(pm7)



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Sutter Medical Center  
CUMULATIVE PLUS SUTTER PROJECT  
PM Peak Hour

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## Scenario Report

Scenario: pm7FUsp  
Command: pm7FUsp  
Volume: pm7FUsp  
Geometry: pm7FUsp  
Impact Fee: Default Impact Fee  
Trip Generation: Default Trip Generation  
Trip Distribution: Default Trip Distribution  
Paths: Default Paths  
Routes: Default Routes  
Configuration: Default Configuration

Sutter Medical Center
CUMULATIVE PLUS SUTTER PROJECT
PM Peak Hour

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #3434 26th St & N St

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.394

Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 10.4

Optimal Cycle: 0 Level Of Service: B

\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 13 columns representing different volume and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 13 columns for saturation flow parameters like Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 13 columns for capacity analysis metrics like Vol/Sat, Crit Moves, Delay/Veh, etc.

\*\*\*\*\*

Sutter Medical Center
CUMULATIVE PLUS SUTTER PROJECT
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #5800 26th St & K St

\*\*\*\*\*

Average Delay (sec/veh): 5.7 Worst Case Level Of Service: E[ 41.4]

\*\*\*\*\*

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Uncontrolled Uncontrolled
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 0 1! 0 0 0 0 1! 0 0 0 0 1! 0 0

Volume Module:
Base Vol: 5 60 47 15 47 32 16 484 20 26 622 31
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 5 60 47 15 47 32 16 484 20 26 622 31
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 5 60 47 15 47 32 16 484 20 26 622 31
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Final Vol.: 5 60 47 15 47 32 16 484 20 26 622 31

Critical Gap Module:
Critical Gp: 7.1 6.5 6.2 7.1 6.5 6.2 4.1 xxxx xxxxx 4.1 xxxx xxxxx
FollowUpTim: 3.5 4.0 3.3 3.5 4.0 3.3 2.2 xxxx xxxxx 2.2 xxxx xxxxx

Capacity Module:
Cnflct Vol: 1255 1231 494 1269 1226 638 653 xxxx xxxxx 504 xxxx xxxxx
Potent Cap.: 150 179 579 147 180 481 943 xxxx xxxxx 1071 xxxx xxxxx
Move Cap.: 107 172 579 95 173 481 943 xxxx xxxxx 1071 xxxx xxxxx
Volume/Cap: 0.05 0.35 0.08 0.16 0.27 0.07 0.02 xxxx xxxxx 0.02 xxxx xxxxx

Level Of Service Module:
Queue: xxxxx xxxx xxxxx xxxxx xxxx xxxxx 0.1 xxxx xxxxx 0.1 xxxx xxxxx
Stopped Del: xxxxx xxxx xxxxx xxxxx xxxx xxxxx 8.9 xxxx xxxxx 8.4 xxxx xxxxx
LOS by Move: \* \* \* \* \* A \* \* A \* \*
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx 235 xxxxx xxxx 189 xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
SharedQueue: xxxxx 2.4 xxxxx xxxxx 2.5 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd StpDel: xxxxx 33.6 xxxxx xxxxx 41.4 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS: \* D \* \* E \* \* \* \* \*
ApproachDel: 33.6 41.4 xxxxxxxx xxxxxxxx
ApproachLOS: D E \* \*

Sutter Medical Center
CUMULATIVE PLUS SUTTER PROJECT
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #6395 27th St & N St
\*\*\*\*\*

Average Delay (sec/veh): 3.3 Worst Case Level Of Service: C [ 15.7]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns for volume and adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Vol.

Critical Gap Module: Table with 12 columns for gap and follow-up times. Rows include Critical Gp and FollowUpTim.

Capacity Module: Table with 12 columns for capacity and volume. Rows include Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module: Table with 12 columns for queue, delay, and LOS. Rows include Queue, Stopped Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd StpDel, Shared LOS, ApproachDel, and ApproachLOS.



Sutter Medical Center
CUMULATIVE PLUS SUTTER PROJECT
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #6396 Capitol Ave & 27th St

\*\*\*\*\*

Average Delay (sec/veh): 37.1 Worst Case Level Of Service: F[283.6]

\*\*\*\*\*

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Uncontrolled Uncontrolled
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 0 1! 0 0 0 0 1! 0 0 0 0 1! 0 0

Volume Module:

Base Vol: 34 44 67 110 51 14 6 535 25 9 639 3
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 34 44 67 110 51 14 6 535 25 9 639 3
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 34 44 67 110 51 14 6 535 25 9 639 3
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Final Vol.: 34 44 67 110 51 14 6 535 25 9 639 3

Critical Gap Module:

Critical Gp: 7.1 6.5 6.2 7.1 6.5 6.2 4.1 xxxxx xxxxxx 4.1 xxxxx xxxxxx
FollowUpTim: 3.5 4.0 3.3 3.5 4.0 3.3 2.2 xxxxx xxxxxx 2.2 xxxxx xxxxxx

Capacity Module:

Cnflict Vol: 1251 1220 547 1274 1231 641 642 xxxxx xxxxxx 560 xxxxx xxxxxx
Potent Cap.: 151 182 540 146 179 479 952 xxxxx xxxxxx 1021 xxxxx xxxxxx
Move Cap.: 112 179 540 102 176 479 952 xxxxx xxxxxx 1021 xxxxx xxxxxx
Volume/Cap: 0.30 0.25 0.12 1.08 0.29 0.03 0.01 xxxxx xxxxx 0.01 xxxxx xxxxx

Level Of Service Module:

Queue: xxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx 0.0 xxxxx xxxxxx 0.0 xxxxx xxxxxx
Stopped Del: xxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx 8.8 xxxxx xxxxxx 8.6 xxxxx xxxxxx
LOS by Move: \* \* \* \* \* A \* \* \* A \* \* \*
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx 216 xxxxxx xxxxx 125 xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
SharedQueue: xxxxxx 4.2 xxxxxx xxxxxx 11.8 xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx
Shrd StpDel: xxxxxx 50.3 xxxxxx xxxxxx 284 xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx
Shared LOS: \* F \* \* F \* \* \* \* \*
ApproachDel: 50.3 283.6 xxxxxxxx xxxxxxxx
ApproachLOS: F F \* \*

Sutter Medical Center
CUMULATIVE PLUS SUTTER PROJECT
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #6397 27th St & L St

\*\*\*\*\*

Average Delay (sec/veh): 2.2 Worst Case Level Of Service: B[ 14.6]

\*\*\*\*\*

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Uncontrolled Uncontrolled
Rights: Include Include Include Include
Lanes: 1 0 0 0 0 0 0 0 0 0 0 0 1 2 0 0

Volume Module:
Base Vol: 48 0 0 0 0 0 0 0 0 0 149 794 0
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 48 0 0 0 0 0 0 0 0 0 149 794 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 48 0 0 0 0 0 0 0 0 0 149 794 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Final Vol.: 48 0 0 0 0 0 0 0 0 0 149 794 0

Critical Gap Module:
Critical Gp: 6.4 xxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx 4.1 xxxxxx xxxxxx
FollowUpTim: 3.5 xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx 2.2 xxxxxx xxxxxx

Capacity Module:
Cnflct Vol: 563 xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx 0 xxxxxx xxxxxx
Potent Cap.: 491 xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx 900 xxxxxx xxxxxx
Move Cap.: 423 xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx 900 xxxxxx xxxxxx
Volume/Cap: 0.11 xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx 0.17 xxxxxx xxxxxx

Level Of Service Module:
Queue: 0.4 xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx 0.6 xxxxxx xxxxxx
Stopped Del: 14.6 xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx 9.8 xxxxxx xxxxxx
LOS by Move: B \* \* \* \* \* \* \* \* \* \* A \* \* \*
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx
SharedQueue: xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx 0.6 xxxxxx xxxxxx
Shrd StpDel: xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx 9.8 xxxxxx xxxxxx
Shared LOS: \* \* \* \* \* \* \* \* \* \* A \* \* \*
ApproachDel: 14.6 xxxxxx xxxxxx xxxxxx
ApproachLOS: B \* \* \*

CUMULATIVE PLUS TRINITY PROJECT  
WITH SMART PLAN

AM Peak Hour

Unsignalized Intersections

(am8)



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Sutter Medical Center  
CUMULATIVE PLUS TRINITY  
AM Peak Hour  
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Signal Warrant Summary Report

| Intersection                | Base Met<br>[Del / Vol] | Future Met<br>[Del / Vol] |
|-----------------------------|-------------------------|---------------------------|
| #3434 26th St & N St        |                         |                           |
| #5800 26th St & K St        | No / No                 | ??? / ???                 |
| #6395 27th St & N St        | No / No                 | ??? / ???                 |
| #6396 Capitol Ave & 27th St | No / No                 | ??? / ???                 |
| #6397 27th St & L St        | No / No                 | ??? / ???                 |

Sutter Medical Center
CUMULATIVE PLUS TRINITY
AM Peak Hour

Peak Hour Delay Signal Warrant Report

\*\*\*\*\*
Intersection #5800 26th St & K St
\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Stop Sign, Uncontrolled), Lanes (0 0 1! 0 0), Final Vol. (15 38 32, 7 38 16, 13 286 18, 14 602 29), and ApproachDel (21.1, 22.0, xxxxxx, xxxxxx).

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.5]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=85]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1108]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.4]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=61]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1108]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

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 Sutter Medical Center  
 CUMULATIVE PLUS TRINITY  
 AM Peak Hour  
 -----

Peak Hour Volume Signal Warrant Report [Urban]

\*\*\*\*\*

Intersection #5800 26th St & K St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:   | North Bound |    |        | South Bound |    |        | East Bound   |     |        | West Bound   |     |        |
|-------------|-------------|----|--------|-------------|----|--------|--------------|-----|--------|--------------|-----|--------|
| Movement:   | L           | T  | R      | L           | T  | R      | L            | T   | R      | L            | T   | R      |
| Control:    | Stop Sign   |    |        | Stop Sign   |    |        | Uncontrolled |     |        | Uncontrolled |     |        |
| Lanes:      | 0           | 0  | 1! 0 0 | 0           | 0  | 1! 0 0 | 0            | 0   | 1! 0 0 | 0            | 0   | 1! 0 0 |
| Final Vol.: | 15          | 38 | 32     | 7           | 38 | 16     | 13           | 286 | 18     | 14           | 602 | 29     |

Major Street Volume: 962  
 Minor Approach Volume: 85  
 Minor Approach Volume Threshold: 230

Sutter Medical Center
CUMULATIVE PLUS TRINITY
AM Peak Hour

Peak Hour Delay Signal Warrant Report

\*\*\*\*\*
Intersection #6395 27th St & N St
\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Stop Sign, Uncontrolled), Lanes, Final Vol., and ApproachDel.

Approach[northbound] [lanes=1] [control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=63]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=568]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

Approach[southbound] [lanes=1] [control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=46]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=568]
FAIL - Total volume less than 650 for intersection
with less than four approaches.



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 Sutter Medical Center  
 CUMULATIVE PLUS TRINITY  
 AM Peak Hour  
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Peak Hour Volume Signal Warrant Report [Urban]

\*\*\*\*\*

Intersection #6395 27th St & N St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

|             | North Bound |    |    |   | South Bound |    |   |   | East Bound   |     |   |   | West Bound   |   |   |   |   |   |   |   |
|-------------|-------------|----|----|---|-------------|----|---|---|--------------|-----|---|---|--------------|---|---|---|---|---|---|---|
| Approach:   |             |    |    |   |             |    |   |   |              |     |   |   |              |   |   |   |   |   |   |   |
| Movement:   | L           | T  | R  |   | L           | T  | R |   | L            | T   | R |   | L            | T | R |   |   |   |   |   |
| Control:    | Stop Sign   |    |    |   | Stop Sign   |    |   |   | Uncontrolled |     |   |   | Uncontrolled |   |   |   |   |   |   |   |
| Lanes:      | 0           | 0  | 0  | 1 | 0           | 0  | 1 | 0 | 0            | 0   | 0 | 1 | 1            | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Final Vol.: | 0           | 48 | 15 |   | 34          | 12 | 0 |   | 78           | 375 | 6 |   | 0            | 0 | 0 |   |   |   |   |   |

Major Street Volume: 459  
 Minor Approach Volume: 63  
 Minor Approach Volume Threshold: 553

Sutter Medical Center
CUMULATIVE PLUS TRINITY
AM Peak Hour

Peak Hour Delay Signal Warrant Report

\*\*\*\*\*
Intersection #6396 Capitol Ave & 27th St
\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Lanes, Final Vol., and ApproachDel.

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.7]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=95]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1304]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=3.9]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=179]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1304]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

-----  
 Sutter Medical Center  
 CUMULATIVE PLUS TRINITY  
 AM Peak Hour  
 -----

Peak Hour Volume Signal Warrant Report [Urban]

\*\*\*\*\*

Intersection #6396 Capitol Ave & 27th St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:   | North Bound |    |        | South Bound |     |        | East Bound   |     |        | West Bound   |     |        |
|-------------|-------------|----|--------|-------------|-----|--------|--------------|-----|--------|--------------|-----|--------|
| Movement:   | L           | T  | R      | L           | T   | R      | L            | T   | R      | L            | T   | R      |
| Control:    | Stop Sign   |    |        | Stop Sign   |     |        | Uncontrolled |     |        | Uncontrolled |     |        |
| Lanes:      | 0           | 0  | 1! 0 0 | 0           | 0   | 1! 0 0 | 0            | 0   | 1! 0 0 | 0            | 0   | 1! 0 0 |
| Final Vol.: | 19          | 31 | 45     | 61          | 108 | 10     | 8            | 354 | 31     | 12           | 608 | 17     |

Major Street Volume: 1030  
 Minor Approach Volume: 179  
 Minor Approach Volume Threshold: 212

Sutter Medical Center  
 CUMULATIVE PLUS TRINITY  
 AM Peak Hour

Peak Hour Delay Signal Warrant Report

\*\*\*\*\*  
 Intersection #6397 27th St & L St  
 \*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:    | North Bound |   |   | South Bound |   |   | East Bound   |   |   | West Bound   |     |   |
|--------------|-------------|---|---|-------------|---|---|--------------|---|---|--------------|-----|---|
| Movement:    | L           | T | R | L           | T | R | L            | T | R | L            | T   | R |
| Control:     | Stop Sign   |   |   | Stop Sign   |   |   | Uncontrolled |   |   | Uncontrolled |     |   |
| Lanes:       | 1           | 0 | 0 | 0           | 0 | 0 | 0            | 0 | 0 | 0            | 1   | 2 |
| Final Vol.:  | 49          | 0 | 0 | 0           | 0 | 0 | 0            | 0 | 0 | 176          | 944 | 0 |
| ApproachDel: | 16.7        |   |   | xxxxxx      |   |   | xxxxxx       |   |   | xxxxxx       |     |   |

Approach[northbound] [lanes=1] [control=Stop]  
 Signal Warrant Rule #1: [vehicle-hours=0.2]  
 FAIL - Vehicle-hours less than 4 for one lane approach.  
 Signal Warrant Rule #2: [approach volume=49]  
 FAIL - Approach volume less than 100 for one lane approach.  
 Signal Warrant Rule #3: [approach count=2] [total volume=1169]  
 SUCCEED - Total volume greater than or equal to 650 for intersection  
 with less than four approaches.

-----  
 Sutter Medical Center  
 CUMULATIVE PLUS TRINITY  
 AM Peak Hour  
 -----

Peak Hour Volume Signal Warrant Report [Urban]

\*\*\*\*\*

Intersection #6397 27th St & L St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

|             | North Bound |   |   |   | South Bound |   |   |   | East Bound   |   |   |   | West Bound   |     |   |   |
|-------------|-------------|---|---|---|-------------|---|---|---|--------------|---|---|---|--------------|-----|---|---|
| Movement:   | L           | T | R |   | L           | T | R |   | L            | T | R |   | L            | T   | R |   |
| Control:    | Stop Sign   |   |   |   | Stop Sign   |   |   |   | Uncontrolled |   |   |   | Uncontrolled |     |   |   |
| Lanes:      | 1           | 0 | 0 | 0 | 0           | 0 | 0 | 0 | 0            | 0 | 0 | 0 | 0            | 1   | 2 | 0 |
| Final Vol.: | 49          | 0 | 0 |   | 0           | 0 | 0 |   | 0            | 0 | 0 |   | 176          | 944 | 0 |   |

Major Street Volume: 1120

Minor Approach Volume: 49

Minor Approach Volume Threshold: 246

Sutter Medical Center
CUMULATIVE PLUS TRINITY
AM Peak Hour

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #3434 26th St & N St
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.215
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 8.6
Optimal Cycle: 0 Level Of Service: A
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, and Lanes.

Volume Module table with 13 columns and 13 rows including Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Vol.

Saturation Flow Module table with 13 columns and 3 rows including Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 13 columns and 11 rows including Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, and LOS by Appr.

\*\*\*\*\*

Sutter Medical Center
CUMULATIVE PLUS TRINITY
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #5800 26th St & K St
\*\*\*\*\*

Average Delay (sec/veh): 3.0 Worst Case Level Of Service: C[ 22.0]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns for volume and growth factors across different movements.

Critical Gap Module: Table with 12 columns for critical gap and follow-up times.

Capacity Module: Table with 12 columns for conflict volume, potential capacity, and move capacity.

Level Of Service Module: Table with 12 columns for queue, stopped delay, LOS by move, and approach delay.

Sutter Medical Center
CUMULATIVE PLUS TRINITY
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #6395 27th St & N St
\*\*\*\*\*

Average Delay (sec/veh): 3.9 Worst Case Level Of Service: B[ 13.7]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns for traffic volumes and adjustment factors like Growth Adj, PHF Adj, etc.

Critical Gap Module: Table with 13 columns for critical gap values and follow-up times.

Capacity Module: Table with 13 columns for capacity-related metrics like Cnflct Vol, Potent Cap., etc.

Level Of Service Module: Table with 13 columns for queue lengths, stopped delays, and shared delays.



Sutter Medical Center
CUMULATIVE PLUS TRINITY
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #6396 Capitol Ave & 27th St

\*\*\*\*\*

Average Delay (sec/veh): 12.8 Worst Case Level Of Service: F[ 78.5]

\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module:

Table with 13 columns representing traffic flow directions and 8 rows of volume-related metrics like Base Vol, Growth Adj, etc.

Critical Gap Module:

Table with 13 columns and 2 rows showing critical gap and follow-up time values.

Capacity Module:

Table with 13 columns and 4 rows showing capacity-related metrics like Conflict Vol, Potent Cap., etc.

Level Of Service Module:

Table with 13 columns and 10 rows showing level of service metrics like Queue, Stopped Del, LOS by Move, etc.

Sutter Medical Center
CUMULATIVE PLUS TRINITY
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #6397 27th St & L St

\*\*\*\*\*

Average Delay (sec/veh): 2.2 Worst Case Level Of Service: C[ 16.7]

\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns for volume components (Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Vol) across four directions.

Critical Gap Module: Table with 13 columns for critical gap and follow-up time components across four directions.

Capacity Module: Table with 13 columns for capacity components (Conflict Vol, Potent Cap., Move Cap., Volume/Cap) across four directions.

Level Of Service Module: Table with 13 columns for level of service components (Queue, Stopped Del, LOS by Move, Shared Cap., Shared Queue, Shrd StpDel, Shared LOS, ApproachDel, ApproachLOS) across four directions.

CUMULATIVE PLUS TRINITY PROJECT  
WITH SMART PLAN

PM Peak Hour

Unsignalized Intersections

(pm8)



Sutter Medical Center  
CUMULATIVE PLUS TRINITY  
PM Peak Hour

| Intersection                | Signal Warrant Summary Report |  | Future Met<br>[Del / Vol] |
|-----------------------------|-------------------------------|--|---------------------------|
|                             | Base Met<br>[Del / Vol]       |  |                           |
| #3434 26th St & N St        |                               |  |                           |
| #5800 26th St & K St        | No / No                       |  | ??? / ???                 |
| #6395 27th St & N St        | No / No                       |  | ??? / ???                 |
| #6396 Capitol Ave & 27th St | No / No                       |  | ??? / ???                 |
| #6397 27th St & L St        | No / No                       |  | ??? / ???                 |

Sutter Medical Center  
CUMULATIVE PLUS TRINITY  
PM Peak Hour

Peak Hour Delay Signal Warrant Report

\*\*\*\*\*

Intersection #5800 26th St & K St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:    | North Bound |    |      | South Bound |    |      | East Bound   |     |      | West Bound   |     |      |
|--------------|-------------|----|------|-------------|----|------|--------------|-----|------|--------------|-----|------|
| Movement:    | L           | T  | R    | L           | T  | R    | L            | T   | R    | L            | T   | R    |
| Control:     | Stop Sign   |    |      | Stop Sign   |    |      | Uncontrolled |     |      | Uncontrolled |     |      |
| Lanes:       | 0           | 0  | 1! 0 | 0           | 0  | 1! 0 | 0            | 0   | 1! 0 | 0            | 0   | 1! 0 |
| Final Vol.:  | 5           | 57 | 21   | 15          | 45 | 33   | 15           | 466 | 19   | 26           | 613 | 30   |
| ApproachDel: | 33.1        |    |      | 36.2        |    |      | xxxxxxx      |     |      | xxxxxxx      |     |      |

Approach[northbound] [lanes=1] [control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.8]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=83]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=4] [total volume=1345]  
SUCCEED - Total volume greater than or equal to 800 for intersection  
with four or more approaches.

Approach[southbound] [lanes=1] [control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.9]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=93]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=4] [total volume=1345]  
SUCCEED - Total volume greater than or equal to 800 for intersection  
with four or more approaches.

-----  
 Sutter Medical Center  
 CUMULATIVE PLUS TRINITY  
 PM Peak Hour  
 -----

Peak Hour Volume Signal Warrant Report [Urban]

\*\*\*\*\*

Intersection #5800 26th St & K St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:   | North Bound |    |        | South Bound |    |        | East Bound   |     |        | West Bound   |     |        |
|-------------|-------------|----|--------|-------------|----|--------|--------------|-----|--------|--------------|-----|--------|
| Movement:   | L           | T  | R      | L           | T  | R      | L            | T   | R      | L            | T   | R      |
| Control:    | Stop Sign   |    |        | Stop Sign   |    |        | Uncontrolled |     |        | Uncontrolled |     |        |
| Lanes:      | 0           | 0  | 1! 0 0 | 0           | 0  | 1! 0 0 | 0            | 0   | 1! 0 0 | 0            | 0   | 1! 0 0 |
| Final Vol.: | 5           | 57 | 21     | 15          | 45 | 33     | 15           | 466 | 19     | 26           | 613 | 30     |

Major Street Volume: 1169  
 Minor Approach Volume: 93  
 Minor Approach Volume Threshold: 178

Sutter Medical Center
CUMULATIVE PLUS TRINITY
PM Peak Hour

Peak Hour Delay Signal Warrant Report

\*\*\*\*\*
Intersection #6395 27th St & N St
\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Lanes, Final Vol., and ApproachDel.

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=36]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=941]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=29]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=941]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.



Sutter Medical Center  
CUMULATIVE PLUS TRINITY  
PM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

\*\*\*\*\*

Intersection #6395 27th St & N St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

-----|-----|-----|-----|

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

-----|-----|-----|-----|

Control: Stop Sign Stop Sign Uncontrolled Uncontrolled

Lanes: 0 0 0 1 0 0 1 0 0 0 0 1 1 1 0 0 0 0 0 0

Final Vol.: 0 23 13 22 7 0 14 838 24 0 0 0 0

-----|-----|-----|-----|

Major Street Volume: 876

Minor Approach Volume: 36

Minor Approach Volume Threshold: 330

Sutter Medical Center
CUMULATIVE PLUS TRINITY
PM Peak Hour

Peak Hour Delay Signal Warrant Report

\*\*\*\*\*
Intersection #6396 Capitol Ave & 27th St
\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Stop Sign, Uncontrolled), Lanes, Final Vol., and ApproachDel.

Approach[northbound] [lanes=1] [control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=43]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1391]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[southbound] [lanes=1] [control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.5]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=41]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1391]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Sutter Medical Center  
 CUMULATIVE PLUS TRINITY  
 PM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

\*\*\*\*\*

Intersection #6396 Capitol Ave & 27th St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:   | North Bound |   |    |   | South Bound |    |   |    | East Bound   |   |   |     | West Bound   |   |   |   |     |    |   |   |
|-------------|-------------|---|----|---|-------------|----|---|----|--------------|---|---|-----|--------------|---|---|---|-----|----|---|---|
| Movement:   | L           | - | T  | - | R           | L  | - | T  | -            | R | L | -   | T            | - | R | L | -   | T  | - | R |
| Control:    | Stop Sign   |   |    |   | Stop Sign   |    |   |    | Uncontrolled |   |   |     | Uncontrolled |   |   |   |     |    |   |   |
| Lanes:      | 0           | 0 | 1! | 0 | 0           | 0  | 0 | 1! | 0            | 0 | 0 | 0   | 1!           | 0 | 0 | 0 | 0   | 1! | 0 | 0 |
| Final Vol.: | 5           |   | 16 |   | 22          | 26 |   | 8  |              | 7 | 6 | 631 |              | 7 |   | 8 | 652 |    | 3 |   |

Major Street Volume: 1307  
 Minor Approach Volume: 43  
 Minor Approach Volume Threshold: 148

Sutter Medical Center  
CUMULATIVE PLUS TRINITY  
PM Peak Hour

Peak Hour Delay Signal Warrant Report

\*\*\*\*\*

Intersection #6397 27th St & L St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:    | North Bound |   |   |   | South Bound |   |   |   | East Bound   |   |   |   | West Bound   |     |   |   |
|--------------|-------------|---|---|---|-------------|---|---|---|--------------|---|---|---|--------------|-----|---|---|
| Movement:    | L           | T | R |   | L           | T | R |   | L            | T | R |   | L            | T   | R |   |
| Control:     | Stop Sign   |   |   |   | Stop Sign   |   |   |   | Uncontrolled |   |   |   | Uncontrolled |     |   |   |
| Lanes:       | 1           | 0 | 0 | 0 | 0           | 0 | 0 | 0 | 0            | 0 | 0 | 0 | 0            | 1   | 2 | 0 |
| Final Vol.:  | 23          | 0 | 0 | 0 | 0           | 0 | 0 | 0 | 0            | 0 | 0 | 0 | 16           | 779 | 0 | 0 |
| ApproachDel: | 10.4        |   |   |   | xxxxxx      |   |   |   | xxxxxx       |   |   |   | xxxxxx       |     |   |   |

Approach[northbound][lanes=1][control=Stop]  
Signal Warrant Rule #1: [vehicle-hours=0.1]  
FAIL - Vehicle-hours less than 4 for one lane approach.  
Signal Warrant Rule #2: [approach volume=23]  
FAIL - Approach volume less than 100 for one lane approach.  
Signal Warrant Rule #3: [approach count=2][total volume=818]  
SUCCEED - Total volume greater than or equal to 650 for intersection  
with less than four approaches.

-----  
 Sutter Medical Center  
 CUMULATIVE PLUS TRINITY  
 PM Peak Hour  
 -----

Peak Hour Volume Signal Warrant Report [Urban]

\*\*\*\*\*

Intersection #6397 27th St & L St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:   | North Bound |   |   |   | South Bound |   |   |   | East Bound   |   |   |   | West Bound   |   |   |    |     |   |   |   |
|-------------|-------------|---|---|---|-------------|---|---|---|--------------|---|---|---|--------------|---|---|----|-----|---|---|---|
| Movement:   | L           | - | T | - | R           | L | - | T | -            | R | L | - | T            | - | R | L  | -   | T | - | R |
| Control:    | Stop Sign   |   |   |   | Stop Sign   |   |   |   | Uncontrolled |   |   |   | Uncontrolled |   |   |    |     |   |   |   |
| Lanes:      | 1           | 0 | 0 | 0 | 0           | 0 | 0 | 0 | 0            | 0 | 0 | 0 | 0            | 0 | 0 | 0  | 1   | 2 | 0 | 0 |
| Final Vol.: | 23          | 0 | 0 | 0 | 0           | 0 | 0 | 0 | 0            | 0 | 0 | 0 | 0            | 0 | 0 | 16 | 779 | 0 | 0 | 0 |

-----  
 Major Street Volume: 795  
 Minor Approach Volume: 23  
 Minor Approach Volume Threshold: 364

Sutter Medical Center
CUMULATIVE PLUS TRINITY
PM Peak Hour

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #3434 26th St & N St

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.395

Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 10.3

Optimal Cycle: 0 Level Of Service: B

\*\*\*\*\*

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Stop Sign Stop Sign

Rights: Include Include Include Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0

Lanes: 0 0 0 1 0 0 1 0 0 0 0 0 1 1 1 0 0 0 0 0 0 0

-----|-----|-----|-----|

Volume Module:

Base Vol: 0 48 23 12 40 0 20 833 21 0 0 0

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 0 48 23 12 40 0 20 833 21 0 0 0

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 0 48 23 12 40 0 20 833 21 0 0 0

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 0 48 23 12 40 0 20 833 21 0 0 0

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Final Vol.: 0 48 23 12 40 0 20 833 21 0 0 0

-----|-----|-----|-----|

Saturation Flow Module:

Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Lanes: 0.00 0.68 0.32 0.23 0.77 0.00 0.07 2.86 0.07 0.00 0.00 0.00

Final Sat.: 0 447 214 145 483 0 51 2127 54 0 0 0

-----|-----|-----|-----|

Capacity Analysis Module:

Vol/Sat: xxxx 0.11 0.11 0.08 0.08 xxxx 0.39 0.39 0.39 xxxx xxxx xxxx

Crit Moves: \*\*\*\* \*\*\*\* \*\*\*\*

Delay/Veh: 0.0 8.8 8.8 9.0 9.0 0.0 10.7 10.6 10.4 0.0 0.0 0.0

Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

AdjDel/Veh: 0.0 8.8 8.8 9.0 9.0 0.0 10.7 10.6 10.4 0.0 0.0 0.0

LOS by Move: \* A A A A \* B B B \* \* \*

ApproachDel: 8.8 9.0 10.6 xxxxxx

Delay Adj: 1.00 1.00 xxxxxx

ApprAdjDel: 8.8 9.0 10.6 xxxxxx

LOS by Appr: A A B \*

\*\*\*\*\*

Sutter Medical Center
CUMULATIVE PLUS TRINITY
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #5800 26th St & K St
\*\*\*\*\*

Average Delay (sec/veh): 4.8 Worst Case Level Of Service: E[ 36.2]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns for volume metrics (Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Vol) across four directions.

Critical Gap Module: Table with 13 columns for gap metrics (Critical Gp, FollowUpTim) across four directions.

Capacity Module: Table with 13 columns for capacity metrics (Cnflct Vol, Potent Cap., Move Cap., Volume/Cap) across four directions.

Level Of Service Module: Table with 13 columns for LOS metrics (Queue, Stopped Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd StpDel, Shared LOS, ApproachDel, ApproachLOS) across four directions.

Sutter Medical Center
CUMULATIVE PLUS TRINITY
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #6395 27th St & N St
\*\*\*\*\*

Average Delay (sec/veh): 1.2 Worst Case Level Of Service: C[ 15.9]
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns for traffic movements and 4 rows for Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Vol.

Critical Gap Module: Table with 12 columns for traffic movements and 2 rows for Critical Gp and FollowUpTim.

Capacity Module: Table with 12 columns for traffic movements and 4 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module: Table with 12 columns for traffic movements and 8 rows for Queue, Stopped Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd StpDel, Shared LOS, ApproachDel, ApproachLOS.



Sutter Medical Center
CUMULATIVE PLUS TRINITY
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #6396 Capitol Ave & 27th St

\*\*\*\*\*

Average Delay (sec/veh): 2.0 Worst Case Level Of Service: E[ 41.0]

\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Volume Module:

Table with 12 columns representing different traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module:

Table with 12 columns for critical gap and follow-up time values.

Capacity Module:

Table with 12 columns for capacity-related metrics like Conflict Vol, Potent Cap., Move Cap., etc.

Level Of Service Module:

Table with 12 columns for level of service metrics like Queue, Stopped Del, LOS by Move, etc.

Sutter Medical Center
CUMULATIVE PLUS TRINITY
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #6397 27th St & L St
\*\*\*\*\*

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: B [ 10.4]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns for volume components (Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Vol) across four directions.

Critical Gap Module: Table with 13 columns for critical gap and follow-up time components across four directions.

Capacity Module: Table with 13 columns for capacity components (Cnflct Vol, Potent Cap., Move Cap., Volume/Cap) across four directions.

Level Of Service Module: Table with 13 columns for LOS components (Queue, Stopped Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd StpDel, Shared LOS, ApproachDel, ApproachLOS) across four directions.

CUMULATIVE PLUS SUTTER PROGRAM PLUS TRINITY PROJECT  
WITH SMART PLAN

AM Peak Hour

Unsignalized Intersections

(am9)



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Sutter Medical Center  
CUMULATIVE PLUS SUTTER PROGRAM PLUS TRINITY PROJECT  
AM Peak Hour

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## Scenario Report

Scenario: am9FUsptp  
Command: am9FUsptp  
Volume: am9FUsptp  
Geometry: am9FUsptp  
Impact Fee: Default Impact Fee  
Trip Generation: Default Trip Generation  
Trip Distribution: Default Trip Distribution  
Paths: Default Paths  
Routes: Default Routes  
Configuration: Default Configuration

Sutter Medical Center  
 CUMULATIVE PLUS SUTTER PROGRAM PLUS TRINITY PROJECT  
 AM Peak Hour

Level Of Service Computation Report  
 2000 HCM 4-Way Stop Method (Base Volume Alternative)

\*\*\*\*\*  
 Intersection #3434 26th St & N St  
 \*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.209  
 Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 8.6  
 Optimal Cycle: 0 Level Of Service: A  
 \*\*\*\*\*

| Approach:   | North Bound |   |   | South Bound |   |   | East Bound |   |   | West Bound |   |   |   |   |   |   |   |   |   |
|-------------|-------------|---|---|-------------|---|---|------------|---|---|------------|---|---|---|---|---|---|---|---|---|
| Movement:   | L           | T | R | L           | T | R | L          | T | R | L          | T | R |   |   |   |   |   |   |   |
| Control:    | Stop Sign   |   |   | Stop Sign   |   |   | Stop Sign  |   |   | Stop Sign  |   |   |   |   |   |   |   |   |   |
| Rights:     | Include     |   |   | Include     |   |   | Include    |   |   | Include    |   |   |   |   |   |   |   |   |   |
| Min. Green: | 0           | 0 | 0 | 0           | 0 | 0 | 0          | 0 | 0 | 0          | 0 | 0 |   |   |   |   |   |   |   |
| Lanes:      | 0           | 0 | 1 | 0           | 0 | 1 | 0          | 0 | 0 | 0          | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 0    | 55   | 16   | 6    | 19   | 0    | 64   | 381  | 8    | 0    | 0    | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0    | 55   | 16   | 6    | 19   | 0    | 64   | 381  | 8    | 0    | 0    | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 0    | 55   | 16   | 6    | 19   | 0    | 64   | 381  | 8    | 0    | 0    | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 0    | 55   | 16   | 6    | 19   | 0    | 64   | 381  | 8    | 0    | 0    | 0    |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Final Vol.:  | 0    | 55   | 16   | 6    | 19   | 0    | 64   | 381  | 8    | 0    | 0    | 0    |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 0.00 | 0.77 | 0.23 | 0.24 | 0.76 | 0.00 | 0.42 | 2.53 | 0.05 | 0.00 | 0.00 | 0.00 |
| Final Sat.: | 0    | 566  | 165  | 166  | 527  | 0    | 306  | 1891 | 40   | 0    | 0    | 0    |

Capacity Analysis Module:

|              |      |      |      |      |      |      |      |      |      |         |      |      |
|--------------|------|------|------|------|------|------|------|------|------|---------|------|------|
| Vol/Sat:     | xxxx | 0.10 | 0.10 | 0.04 | 0.04 | xxxx | 0.21 | 0.20 | 0.20 | xxxx    | xxxx | xxxx |
| Crit Moves:  | **** |      |      | **** |      |      | **** |      |      |         |      |      |
| Delay/Veh:   | 0.0  | 8.2  | 8.2  | 8.1  | 8.1  | 0.0  | 8.9  | 8.6  | 8.5  | 0.0     | 0.0  | 0.0  |
| Delay Adj:   | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00    | 1.00 | 1.00 |
| AdjDel/Veh:  | 0.0  | 8.2  | 8.2  | 8.1  | 8.1  | 0.0  | 8.9  | 8.6  | 8.5  | 0.0     | 0.0  | 0.0  |
| LOS by Move: | *    | A    | A    | A    | A    | *    | A    | A    | A    | *       | *    | *    |
| ApproachDel: | 8.2  |      |      | 8.1  |      |      | 8.7  |      |      | xxxxxxx |      |      |
| Delay Adj:   | 1.00 |      |      | 1.00 |      |      | 1.00 |      |      | xxxxxxx |      |      |
| ApprAdjDel:  | 8.2  |      |      | 8.1  |      |      | 8.7  |      |      | xxxxxxx |      |      |
| LOS by Appr: | A    |      |      | A    |      |      | A    |      |      | *       |      |      |

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Sutter Medical Center  
 CUMULATIVE PLUS SUTTER PROGRAM PLUS TRINITY PROJECT  
 AM Peak Hour

Level Of Service Computation Report  
 2000 HCM Unsignalized Method (Base Volume Alternative)

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Intersection #5800 26th St & K St

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Average Delay (sec/veh): 2.9 Worst Case Level Of Service: C[ 21.2]

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| Approach: | North Bound |   |        | South Bound |   |        | East Bound   |   |        | West Bound   |   |        |
|-----------|-------------|---|--------|-------------|---|--------|--------------|---|--------|--------------|---|--------|
| Movement: | L           | T | R      | L           | T | R      | L            | T | R      | L            | T | R      |
| Control:  | Stop Sign   |   |        | Stop Sign   |   |        | Uncontrolled |   |        | Uncontrolled |   |        |
| Rights:   | Include     |   |        | Include     |   |        | Include      |   |        | Include      |   |        |
| Lanes:    | 0           | 0 | 1! 0 0 | 0           | 0 | 1! 0 0 | 0            | 0 | 1! 0 0 | 0            | 0 | 1! 0 0 |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 15   | 37   | 31   | 6    | 36   | 17   | 13   | 261  | 18   | 14   | 615  | 29   |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 15   | 37   | 31   | 6    | 36   | 17   | 13   | 261  | 18   | 14   | 615  | 29   |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 15   | 37   | 31   | 6    | 36   | 17   | 13   | 261  | 18   | 14   | 615  | 29   |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Final Vol.:  | 15   | 37   | 31   | 6    | 36   | 17   | 13   | 261  | 18   | 14   | 615  | 29   |

Critical Gap Module:

|              |     |     |     |     |     |     |     |      |        |     |      |        |
|--------------|-----|-----|-----|-----|-----|-----|-----|------|--------|-----|------|--------|
| Critical Gp: | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | xxxx | xxxxxx | 4.1 | xxxx | xxxxxx |
| FollowUpTim: | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | xxxx | xxxxxx | 2.2 | xxxx | xxxxxx |

Capacity Module:

|              |      |      |      |      |      |      |      |      |        |      |      |        |
|--------------|------|------|------|------|------|------|------|------|--------|------|------|--------|
| Cnflct Vol:  | 980  | 968  | 270  | 988  | 963  | 630  | 644  | xxxx | xxxxxx | 279  | xxxx | xxxxxx |
| Potent Cap.: | 231  | 256  | 774  | 228  | 258  | 486  | 951  | xxxx | xxxxxx | 1295 | xxxx | xxxxxx |
| Move Cap.:   | 195  | 250  | 774  | 191  | 251  | 486  | 951  | xxxx | xxxxxx | 1295 | xxxx | xxxxxx |
| Volume/Cap:  | 0.08 | 0.15 | 0.04 | 0.03 | 0.14 | 0.04 | 0.01 | xxxx | xxxxxx | 0.01 | xxxx | xxxxxx |

Level Of Service Module:

|              |        |      |        |        |      |        |         |      |        |         |      |        |
|--------------|--------|------|--------|--------|------|--------|---------|------|--------|---------|------|--------|
| Queue:       | xxxxx  | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx | 0.0     | xxxx | xxxxxx | 0.0     | xxxx | xxxxxx |
| Stopped Del: | xxxxxx | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx | 8.8     | xxxx | xxxxxx | 7.8     | xxxx | xxxxxx |
| LOS by Move: | *      | *    | *      | *      | *    | *      | A       | *    | *      | A       | *    | *      |
| Movement:    | LT     | LTR  | RT     | LT     | LTR  | RT     | LT      | LTR  | RT     | LT      | LTR  | RT     |
| Shared Cap.: | xxxx   | 313  | xxxxxx | xxxx   | 281  | xxxxxx | xxxx    | xxxx | xxxxxx | xxxx    | xxxx | xxxxxx |
| SharedQueue: | xxxxxx | 1.0  | xxxxxx | xxxxxx | 0.8  | xxxxxx | xxxxxx  | xxxx | xxxxxx | xxxxxx  | xxxx | xxxxxx |
| Shrd StpDel: | xxxxxx | 20.6 | xxxxxx | xxxxxx | 21.2 | xxxxxx | xxxxxx  | xxxx | xxxxxx | xxxxxx  | xxxx | xxxxxx |
| Shared LOS:  | *      | C    | *      | *      | C    | *      | *       | *    | *      | *       | *    | *      |
| ApproachDel: |        | 20.6 |        |        | 21.2 |        | xxxxxxx |      |        | xxxxxxx |      |        |
| ApproachLOS: |        | C    |        |        | C    |        |         | *    |        |         | *    |        |

Sutter Medical Center  
 CUMULATIVE PLUS SUTTER PROGRAM PLUS TRINITY PROJECT  
 AM Peak Hour

Level Of Service Computation Report  
 2000 HCM Unsignalized Method (Base Volume Alternative)

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 Intersection #6395 27th St & N St  
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Average Delay (sec/veh): 3.7 Worst Case Level Of Service: B[ 13.2]  
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| Approach: | North Bound |   |   | South Bound |   |   | East Bound   |   |   | West Bound   |   |   |   |   |   |   |   |   |   |
|-----------|-------------|---|---|-------------|---|---|--------------|---|---|--------------|---|---|---|---|---|---|---|---|---|
| Movement: | L           | T | R | L           | T | R | L            | T | R | L            | T | R |   |   |   |   |   |   |   |
| Control:  | Stop Sign   |   |   | Stop Sign   |   |   | Uncontrolled |   |   | Uncontrolled |   |   |   |   |   |   |   |   |   |
| Rights:   | Include     |   |   | Include     |   |   | Include      |   |   | Include      |   |   |   |   |   |   |   |   |   |
| Lanes:    | 0           | 0 | 1 | 0           | 0 | 1 | 0            | 0 | 0 | 0            | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 0    | 42   | 15   | 33   | 12   | 0    | 74   | 368  | 6    | 0    | 0    | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0    | 42   | 15   | 33   | 12   | 0    | 74   | 368  | 6    | 0    | 0    | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 0    | 42   | 15   | 33   | 12   | 0    | 74   | 368  | 6    | 0    | 0    | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Final Vol.:  | 0    | 42   | 15   | 33   | 12   | 0    | 74   | 368  | 6    | 0    | 0    | 0    |

Critical Gap Module:

|              |       |     |     |     |     |       |     |       |        |        |       |        |
|--------------|-------|-----|-----|-----|-----|-------|-----|-------|--------|--------|-------|--------|
| Critical Gp: | xxxxx | 6.5 | 6.2 | 7.1 | 6.5 | xxxxx | 4.1 | xxxxx | xxxxxx | xxxxxx | xxxxx | xxxxxx |
| FollowUpTim: | xxxxx | 4.0 | 3.3 | 3.5 | 4.0 | xxxxx | 2.2 | xxxxx | xxxxxx | xxxxxx | xxxxx | xxxxxx |

Capacity Module:

|              |       |      |      |      |      |        |      |       |        |       |       |        |
|--------------|-------|------|------|------|------|--------|------|-------|--------|-------|-------|--------|
| Cnflct Vol:  | xxxxx | 519  | 126  | 292  | 522  | xxxxx  | 0    | xxxxx | xxxxxx | xxxxx | xxxxx | xxxxxx |
| Potent Cap.: | xxxxx | 464  | 930  | 665  | 462  | xxxxxx | 900  | xxxxx | xxxxxx | xxxxx | xxxxx | xxxxxx |
| Move Cap.:   | xxxxx | 424  | 930  | 565  | 422  | xxxxxx | 900  | xxxxx | xxxxxx | xxxxx | xxxxx | xxxxxx |
| Volume/Cap:  | xxxxx | 0.10 | 0.02 | 0.06 | 0.03 | xxxxx  | 0.08 | xxxxx | xxxxxx | xxxxx | xxxxx | xxxxxx |

Level Of Service Module:

|              |        |       |        |        |       |        |         |       |        |         |       |        |
|--------------|--------|-------|--------|--------|-------|--------|---------|-------|--------|---------|-------|--------|
| Queue:       | xxxxx  | xxxxx | xxxxxx | xxxxxx | xxxxx | xxxxxx | 0.3     | xxxxx | xxxxxx | xxxxxx  | xxxxx | xxxxxx |
| Stopped Del: | xxxxxx | xxxxx | xxxxxx | xxxxxx | xxxxx | xxxxxx | 9.4     | xxxxx | xxxxxx | xxxxxx  | xxxxx | xxxxxx |
| LOS by Move: | *      | *     | *      | *      | *     | *      | A       | *     | *      | *       | *     | *      |
| Movement:    | LT     | LTR   | RT     | LT     | LTR   | RT     | LT      | LTR   | RT     | LT      | LTR   | RT     |
| Shared Cap.: | xxxxx  | xxxxx | 495    | 518    | xxxxx | xxxxxx | xxxxx   | xxxxx | xxxxxx | xxxxx   | xxxxx | xxxxxx |
| SharedQueue: | xxxxxx | xxxxx | 0.4    | 0.3    | xxxxx | xxxxxx | 0.3     | xxxxx | xxxxxx | xxxxxx  | xxxxx | xxxxxx |
| Shrd StpDel: | xxxxxx | xxxxx | 13.2   | 12.6   | xxxxx | xxxxxx | 9.4     | xxxxx | xxxxxx | xxxxxx  | xxxxx | xxxxxx |
| Shared LOS:  | *      | *     | B      | B      | *     | *      | A       | *     | *      | *       | *     | *      |
| ApproachDel: | 13.2   |       |        | 12.6   |       |        | xxxxxxx |       |        | xxxxxxx |       |        |
| ApproachLOS: | B      |       |        | B      |       |        | *       |       |        | *       |       |        |



Sutter Medical Center  
 CUMULATIVE PLUS SUTTER PROGRAM PLUS TRINITY PROJECT  
 AM Peak Hour

Level Of Service Computation Report  
 2000 HCM Unsignalized Method (Base Volume Alternative)

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 Intersection #6396 Capitol Ave & 27th St  
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Average Delay (sec/veh): 8.2 Worst Case Level Of Service: F[ 55.6]  
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| Approach: | North Bound |   |        | South Bound |   |        | East Bound   |   |        | West Bound   |   |        |
|-----------|-------------|---|--------|-------------|---|--------|--------------|---|--------|--------------|---|--------|
| Movement: | L           | T | R      | L           | T | R      | L            | T | R      | L            | T | R      |
| Control:  | Stop Sign   |   |        | Stop Sign   |   |        | Uncontrolled |   |        | Uncontrolled |   |        |
| Rights:   | Include     |   |        | Include     |   |        | Include      |   |        | Include      |   |        |
| Lanes:    | 0           | 0 | 1! 0 0 | 0           | 0 | 1! 0 0 | 0            | 0 | 1! 0 0 | 0            | 0 | 1! 0 0 |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 19   | 34   | 35   | 52   | 82   | 12   | 8    | 377  | 29   | 3    | 620  | 17   |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 19   | 34   | 35   | 52   | 82   | 12   | 8    | 377  | 29   | 3    | 620  | 17   |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 19   | 34   | 35   | 52   | 82   | 12   | 8    | 377  | 29   | 3    | 620  | 17   |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Final Vol.:  | 19   | 34   | 35   | 52   | 82   | 12   | 8    | 377  | 29   | 3    | 620  | 17   |

Critical Gap Module:

|              |     |     |     |     |     |     |     |      |       |     |      |       |
|--------------|-----|-----|-----|-----|-----|-----|-----|------|-------|-----|------|-------|
| Critical Gp: | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | xxxx | xxxxx | 4.1 | xxxx | xxxxx |
| FollowUpTim: | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | xxxx | xxxxx | 2.2 | xxxx | xxxxx |

Capacity Module:

|              |      |      |      |      |      |      |      |      |       |      |      |       |
|--------------|------|------|------|------|------|------|------|------|-------|------|------|-------|
| Cnflct Vol:  | 1089 | 1051 | 392  | 1077 | 1057 | 629  | 637  | xxxx | xxxxx | 406  | xxxx | xxxxx |
| Potent Cap.: | 195  | 229  | 662  | 199  | 227  | 486  | 956  | xxxx | xxxxx | 1164 | xxxx | xxxxx |
| Move Cap.:   | 135  | 226  | 662  | 165  | 225  | 486  | 956  | xxxx | xxxxx | 1164 | xxxx | xxxxx |
| Volume/Cap:  | 0.14 | 0.15 | 0.05 | 0.32 | 0.37 | 0.02 | 0.01 | xxxx | xxxx  | 0.00 | xxxx | xxxx  |

Level Of Service Module:

|              |               |               |               |               |               |               |               |               |               |               |               |       |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-------|
| Queue:       | xxxxx         | xxxx          | xxxxx         | xxxxx         | xxxx          | xxxxx         | 0.0           | xxxx          | xxxxx         | 0.0           | xxxx          | xxxxx |
| Stopped Del: | xxxxx         | xxxx          | xxxxx         | xxxxx         | xxxx          | xxxxx         | 8.8           | xxxx          | xxxxx         | 8.1           | xxxx          | xxxxx |
| LOS by Move: | *             | *             | *             | *             | *             | *             | A             | *             | *             | A             | *             | *     |
| Movement:    | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT |       |
| Shared Cap.: | xxxx          | 256           | xxxxx         | xxxx          | 207           | xxxxx         | xxxx          | xxxx          | xxxxx         | xxxx          | xxxx          | xxxxx |
| SharedQueue: | xxxxx         | 1.5           | xxxxx         | xxxxx         | 4.5           | xxxxx         | xxxxx         | xxxx          | xxxxx         | xxxxx         | xxxx          | xxxxx |
| Shrd StpDel: | xxxxx         | 26.3          | xxxxx         | xxxxx         | 55.6          | xxxxx         | xxxxx         | xxxx          | xxxxx         | xxxxx         | xxxx          | xxxxx |
| Shared LOS:  | *             | D             | *             | *             | F             | *             | *             | *             | *             | *             | *             | *     |
| ApproachDel: |               | 26.3          |               |               | 55.6          |               | xxxxxxx       |               |               | xxxxxxx       |               |       |
| ApproachLOS: |               | D             |               |               | F             |               | *             |               |               | *             |               |       |

Sutter Medical Center  
 CUMULATIVE PLUS SUTTER PROGRAM PLUS TRINITY PROJECT  
 AM Peak Hour

Level Of Service Computation Report  
 2000 HCM Unsignalized Method (Base Volume Alternative)

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 Intersection #6397 27th St & L St  
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Average Delay (sec/veh): 2.0 Worst Case Level Of Service: C [ 15.0 ]

| Approach: | North Bound |   |   | South Bound |   |   | East Bound   |   |   | West Bound   |   |   |
|-----------|-------------|---|---|-------------|---|---|--------------|---|---|--------------|---|---|
| Movement: | L           | T | R | L           | T | R | L            | T | R | L            | T | R |
| Control:  | Stop Sign   |   |   | Stop Sign   |   |   | Uncontrolled |   |   | Uncontrolled |   |   |
| Rights:   | Include     |   |   | Include     |   |   | Include      |   |   | Include      |   |   |
| Lanes:    | 1           | 0 | 0 | 0           | 0 | 0 | 0            | 0 | 0 | 0            | 1 | 2 |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 52   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 143  | 910  | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 52   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 143  | 910  | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 52   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 143  | 910  | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Final Vol.:  | 52   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 143  | 910  | 0    |

Critical Gap Module:

|              |     |      |        |        |      |        |        |      |        |     |      |        |
|--------------|-----|------|--------|--------|------|--------|--------|------|--------|-----|------|--------|
| Critical Gp: | 6.4 | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx | 4.1 | xxxx | xxxxxx |
| FollowUpTim: | 3.5 | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx | 2.2 | xxxx | xxxxxx |

Capacity Module:

|              |      |      |        |      |      |        |      |      |        |      |      |        |
|--------------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|
| Cnflct Vol:  | 589  | xxxx | xxxxxx | xxxx | xxxx | xxxxxx | xxxx | xxxx | xxxxxx | 0    | xxxx | xxxxxx |
| Potent Cap.: | 474  | xxxx | xxxxxx | xxxx | xxxx | xxxxxx | xxxx | xxxx | xxxxxx | 900  | xxxx | xxxxxx |
| Mov Cap.:    | 411  | xxxx | xxxxxx | xxxx | xxxx | xxxxxx | xxxx | xxxx | xxxxxx | 900  | xxxx | xxxxxx |
| Volume/Cap:  | 0.13 | xxxx | xxxx   | xxxx | xxxx | xxxx   | xxxx | xxxx | xxxx   | 0.16 | xxxx | xxxx   |

Level Of Service Module:

|              |               |               |               |               |               |               |               |               |               |               |               |        |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------|
| Queue:       | 0.4           | xxxx          | xxxxxx        | xxxxxx        | xxxx          | xxxxxx        | xxxxxx        | xxxx          | xxxxxx        | 0.6           | xxxx          | xxxxxx |
| Stopped Del: | 15.0          | xxxx          | xxxxxx        | xxxxxx        | xxxx          | xxxxxx        | xxxxxx        | xxxx          | xxxxxx        | 9.8           | xxxx          | xxxxxx |
| LOS by Move: | C             | *             | *             | *             | *             | *             | *             | *             | *             | A             | *             | *      |
| Movement:    | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT |        |
| Shared Cap.: | xxxx          | xxxx          | xxxxxx        | xxxx          | xxxx          | xxxxxx        | xxxx          | xxxx          | xxxxxx        | xxxx          | xxxx          | xxxxxx |
| SharedQueue: | xxxxxx        | xxxx          | xxxxxx        | xxxxxx        | xxxx          | xxxxxx        | xxxxxx        | xxxx          | xxxxxx        | 0.6           | xxxx          | xxxxxx |
| Shrd StpDel: | xxxxxx        | xxxx          | xxxxxx        | xxxxxx        | xxxx          | xxxxxx        | xxxxxx        | xxxx          | xxxxxx        | 9.8           | xxxx          | xxxxxx |
| Shared LOS:  | *             | *             | *             | *             | *             | *             | *             | *             | *             | A             | *             | *      |
| ApproachDel: | 15.0          |               | xxxxxx        |               |               | xxxxxx        |               |               | xxxxxx        | xxxxxx        |               |        |
| ApproachLOS: | C             |               | *             |               |               | *             |               |               | *             | *             |               |        |

CUMULATIVE PLUS SUTTER PROGRAM PLUS TRINITY PROJECT  
WITH SMART PLAN

PM Peak Hour

Unsignalized Intersections

(pm9)



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Sutter Medical Center  
CUMULATIVE PLUS SUTTER PROGRAM PLUS TRINITY PROJECT  
PM Peak Hour

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## Scenario Report

Scenario: pm9FUsptp  
Command: pm9FUsptp  
Volume: pm9FUsptp  
Geometry: pm9FUsptp  
Impact Fee: Default Impact Fee  
Trip Generation: Default Trip Generation  
Trip Distribution: Default Trip Distribution  
Paths: Default Paths  
Routes: Default Routes  
Configuration: Default Configuration

Sutter Medical Center  
 CUMULATIVE PLUS SUTTER PROGRAM PLUS TRINITY PROJECT  
 PM Peak Hour

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #3434 26th St & N St

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.420

Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 10.7

Optimal Cycle: 0 Level Of Service: B

\*\*\*\*\*

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Stop Sign Stop Sign

Rights: Include Include Include Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0

Lanes: 0 0 0 1 0 0 1 0 0 0 0 1 1 1 0 0 0 0 0 0

Volume Module:

Base Vol: 0 50 21 12 48 0 47 848 22 0 0 0

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 0 50 21 12 48 0 47 848 22 0 0 0

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 0 50 21 12 48 0 47 848 22 0 0 0

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 0 50 21 12 48 0 47 848 22 0 0 0

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Final Vol.: 0 50 21 12 48 0 47 848 22 0 0 0

Saturation Flow Module:

Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Lanes: 0.00 0.70 0.30 0.20 0.80 0.00 0.15 2.78 0.07 0.00 0.00 0.00

Final Sat.: 0 460 193 125 500 0 112 2049 54 0 0 0

Capacity Analysis Module:

Vol/Sat: xxxx 0.11 0.11 0.10 0.10 xxxx 0.42 0.41 0.41 xxxx xxxx xxxx

Crit Moves: \*\*\*\* \*\*\*\* \*\*\*\*

Delay/Veh: 0.0 8.9 8.9 9.1 9.1 0.0 11.1 10.9 10.7 0.0 0.0 0.0

Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

AdjDel/Veh: 0.0 8.9 8.9 9.1 9.1 0.0 11.1 10.9 10.7 0.0 0.0 0.0

LOS by Move: \* A A A A \* B B B \* \* \*

ApproachDel: 8.9 9.1 10.9 xxxxxx

Delay Adj: 1.00 1.00 xxxxxx

ApprAdjDel: 8.9 9.1 10.9 xxxxxxxx

LOS by Appr: A A B \*

\*\*\*\*\*

Sutter Medical Center  
 CUMULATIVE PLUS SUTTER PROGRAM PLUS TRINITY PROJECT  
 PM Peak Hour

Level Of Service Computation Report  
 2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*  
 Intersection #5800 26th St & K St  
 \*\*\*\*\*

Average Delay (sec/veh): 5.5 Worst Case Level Of Service: E[ 38.9]  
 \*\*\*\*\*

| Approach: | North Bound |   |        | South Bound |   |        | East Bound   |   |        | West Bound   |   |        |
|-----------|-------------|---|--------|-------------|---|--------|--------------|---|--------|--------------|---|--------|
| Movement: | L           | T | R      | L           | T | R      | L            | T | R      | L            | T | R      |
| Control:  | Stop Sign   |   |        | Stop Sign   |   |        | Uncontrolled |   |        | Uncontrolled |   |        |
| Rights:   | Include     |   |        | Include     |   |        | Include      |   |        | Include      |   |        |
| Lanes:    | 0           | 0 | 1! 0 0 | 0           | 0 | 1! 0 0 | 0            | 0 | 1! 0 0 | 0            | 0 | 1! 0 0 |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 5    | 60   | 47   | 15   | 46   | 34   | 15   | 468  | 21   | 25   | 622  | 31   |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 5    | 60   | 47   | 15   | 46   | 34   | 15   | 468  | 21   | 25   | 622  | 31   |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 5    | 60   | 47   | 15   | 46   | 34   | 15   | 468  | 21   | 25   | 622  | 31   |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Final Vol.:  | 5    | 60   | 47   | 15   | 46   | 34   | 15   | 468  | 21   | 25   | 622  | 31   |

Critical Gap Module:

|              |     |     |     |     |     |     |     |      |       |     |      |       |
|--------------|-----|-----|-----|-----|-----|-----|-----|------|-------|-----|------|-------|
| Critical Gp: | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | xxxx | xxxxx | 4.1 | xxxx | xxxxx |
| FollowUpTim: | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | xxxx | xxxxx | 2.2 | xxxx | xxxxx |

Capacity Module:

|              |      |      |      |      |      |      |      |      |       |      |      |       |
|--------------|------|------|------|------|------|------|------|------|-------|------|------|-------|
| Cnflct Vol:  | 1236 | 1212 | 479  | 1250 | 1206 | 638  | 653  | xxxx | xxxxx | 489  | xxxx | xxxxx |
| Potent Cap.: | 154  | 184  | 591  | 151  | 185  | 481  | 943  | xxxx | xxxxx | 1085 | xxxx | xxxxx |
| Move Cap.:   | 112  | 177  | 591  | 100  | 178  | 481  | 943  | xxxx | xxxxx | 1085 | xxxx | xxxxx |
| Volume/Cap:  | 0.04 | 0.34 | 0.08 | 0.15 | 0.26 | 0.07 | 0.02 | xxxx | xxxx  | 0.02 | xxxx | xxxx  |

Level Of Service Module:

|              |               |               |               |               |               |               |               |               |               |               |               |       |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-------|
| Queue:       | xxxxx         | xxxx          | xxxxx         | xxxxx         | xxxx          | xxxxx         | 0.0           | xxxx          | xxxxx         | 0.1           | xxxx          | xxxxx |
| Stopped Del: | xxxxx         | xxxx          | xxxxx         | xxxxx         | xxxx          | xxxxx         | 8.9           | xxxx          | xxxxx         | 8.4           | xxxx          | xxxxx |
| LOS by Move: | *             | *             | *             | *             | *             | *             | A             | *             | *             | A             | *             | *     |
| Movement:    | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT |       |
| Shared Cap.: | xxxx          | 241           | xxxxx         | xxxx          | 198           | xxxxx         | xxxx          | xxxx          | xxxxx         | xxxx          | xxxx          | xxxxx |
| SharedQueue: | xxxxx         | 2.3           | xxxxx         | xxxxx         | 2.3           | xxxxx         | xxxxx         | xxxx          | xxxxx         | xxxxx         | xxxx          | xxxxx |
| Shrd StpDel: | xxxxx         | 32.2          | xxxxx         | xxxxx         | 38.9          | xxxxx         | xxxxx         | xxxx          | xxxxx         | xxxxx         | xxxx          | xxxxx |
| Shared LOS:  | *             | D             | *             | *             | E             | *             | *             | *             | *             | *             | *             | *     |
| ApproachDel: |               | 32.2          |               |               | 38.9          |               | xxxxxxx       |               |               | xxxxxxx       |               |       |
| ApproachLOS: |               | D             |               |               | E             |               | *             |               |               | *             |               |       |

Sutter Medical Center  
 CUMULATIVE PLUS SUTTER PROGRAM PLUS TRINITY PROJECT  
 PM Peak Hour

Level Of Service Computation Report  
 2000 HCM Unsignalized Method (Base Volume Alternative)

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Intersection #6395 27th St & N St

\*\*\*\*\*

Average Delay (sec/veh): 3.4 Worst Case Level Of Service: C[ 16.9]

\*\*\*\*\*

| Approach: | North Bound |   |   | South Bound |   |   | East Bound |   |   | West Bound |   |   |
|-----------|-------------|---|---|-------------|---|---|------------|---|---|------------|---|---|
| Movement: | L           | T | R | L           | T | R | L          | T | R | L          | T | R |

|          |           |   |   |           |   |   |              |   |   |              |   |   |
|----------|-----------|---|---|-----------|---|---|--------------|---|---|--------------|---|---|
| Control: | Stop Sign |   |   | Stop Sign |   |   | Uncontrolled |   |   | Uncontrolled |   |   |
| Rights:  | Include   |   |   | Include   |   |   | Include      |   |   | Include      |   |   |
| Lanes:   | 0         | 0 | 1 | 0         | 1 | 0 | 0            | 1 | 1 | 0            | 0 | 0 |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 0    | 28   | 14   | 111  | 28   | 0    | 44   | 770  | 24   | 0    | 0    | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0    | 28   | 14   | 111  | 28   | 0    | 44   | 770  | 24   | 0    | 0    | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 0    | 28   | 14   | 111  | 28   | 0    | 44   | 770  | 24   | 0    | 0    | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Final Vol.:  | 0    | 28   | 14   | 111  | 28   | 0    | 44   | 770  | 24   | 0    | 0    | 0    |

Critical Gap Module:

|              |        |     |     |     |     |        |     |      |        |        |      |        |
|--------------|--------|-----|-----|-----|-----|--------|-----|------|--------|--------|------|--------|
| Critical Gp: | xxxxxx | 6.5 | 6.2 | 7.1 | 6.5 | xxxxxx | 4.1 | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx |
| FollowUpTim: | xxxxxx | 4.0 | 3.3 | 3.5 | 4.0 | xxxxxx | 2.2 | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx |

Capacity Module:

|              |      |      |      |      |      |        |      |      |        |      |      |        |
|--------------|------|------|------|------|------|--------|------|------|--------|------|------|--------|
| Cnflct Vol:  | xxxx | 870  | 269  | 359  | 882  | xxxxxx | 0    | xxxx | xxxxxx | xxxx | xxxx | xxxxxx |
| Potent Cap.: | xxxx | 292  | 775  | 601  | 287  | xxxxxx | 900  | xxxx | xxxxxx | xxxx | xxxx | xxxxxx |
| Move Cap.:   | xxxx | 277  | 775  | 523  | 273  | xxxxxx | 900  | xxxx | xxxxxx | xxxx | xxxx | xxxxxx |
| Volume/Cap:  | xxxx | 0.10 | 0.02 | 0.21 | 0.10 | xxxx   | 0.05 | xxxx | xxxx   | xxxx | xxxx | xxxx   |

Level Of Service Module:

|              |        |      |        |        |      |        |         |      |        |         |      |        |
|--------------|--------|------|--------|--------|------|--------|---------|------|--------|---------|------|--------|
| Queue:       | xxxxxx | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx | 0.2     | xxxx | xxxxxx | xxxxxx  | xxxx | xxxxxx |
| Stopped Del: | xxxxxx | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx | 9.2     | xxxx | xxxxxx | xxxxxx  | xxxx | xxxxxx |
| LOS by Move: | *      | *    | *      | *      | *    | *      | A       | *    | *      | *       | *    | *      |
| Movement:    | LT     | LTR  | RT     | LT     | LTR  | RT     | LT      | LTR  | RT     | LT      | LTR  | RT     |
| Shared Cap.: | xxxx   | xxxx | 353    | 442    | xxxx | xxxxxx | xxxx    | xxxx | xxxxxx | xxxx    | xxxx | xxxxxx |
| SharedQueue: | xxxxxx | xxxx | 0.4    | 1.3    | xxxx | xxxxxx | 0.2     | xxxx | xxxxxx | xxxxxx  | xxxx | xxxxxx |
| Shrd StpDel: | xxxxxx | xxxx | 16.6   | 16.9   | xxxx | xxxxxx | 9.2     | xxxx | xxxxxx | xxxxxx  | xxxx | xxxxxx |
| Shared LOS:  | *      | *    | C      | C      | *    | *      | A       | *    | *      | *       | *    | *      |
| ApproachDel: |        | 16.6 |        |        | 16.9 |        | xxxxxxx |      |        | xxxxxxx |      |        |
| ApproachLOS: |        | C    |        |        | C    |        |         | *    |        |         | *    |        |



Sutter Medical Center  
 CUMULATIVE PLUS SUTTER PROGRAM PLUS TRINITY PROJECT  
 PM Peak Hour

Level Of Service Computation Report  
 2000 HCM Unsignalized Method (Base Volume Alternative)

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 Intersection #6396 Capitol Ave & 27th St  
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Average Delay (sec/veh): 41.0 Worst Case Level Of Service: F[322.1]  
 \*\*\*\*\*

| Approach:      | North Bound |      |      | South Bound |      |      | East Bound   |      |      | West Bound   |      |      |
|----------------|-------------|------|------|-------------|------|------|--------------|------|------|--------------|------|------|
| Movement:      | L           | T    | R    | L           | T    | R    | L            | T    | R    | L            | T    | R    |
| Control:       | Stop Sign   |      |      | Stop Sign   |      |      | Uncontrolled |      |      | Uncontrolled |      |      |
| Rights:        | Include     |      |      | Include     |      |      | Include      |      |      | Include      |      |      |
| Lanes:         | 0           | 0    | 1!0  | 0           | 0    | 1!0  | 0            | 0    | 1!0  | 0            | 0    | 1!0  |
| Volume Module: |             |      |      |             |      |      |              |      |      |              |      |      |
| Base Vol:      | 37          | 47   | 70   | 110         | 49   | 11   | 6            | 537  | 27   | 11           | 656  | 3    |
| Growth Adj:    | 1.00        | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Initial Bse:   | 37          | 47   | 70   | 110         | 49   | 11   | 6            | 537  | 27   | 11           | 656  | 3    |
| User Adj:      | 1.00        | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| PHF Adj:       | 1.00        | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| PHF Volume:    | 37          | 47   | 70   | 110         | 49   | 11   | 6            | 537  | 27   | 11           | 656  | 3    |
| Reduct Vol:    | 0           | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Final Vol.:    | 37          | 47   | 70   | 110         | 49   | 11   | 6            | 537  | 27   | 11           | 656  | 3    |

| Critical Gap Module: |     |     |     |     |     |     |     |      |       |     |      |       |
|----------------------|-----|-----|-----|-----|-----|-----|-----|------|-------|-----|------|-------|
| Critical Gp:         | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | xxxx | xxxxx | 4.1 | xxxx | xxxxx |
| FollowUpTim:         | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | xxxx | xxxxx | 2.2 | xxxx | xxxxx |

| Capacity Module: |      |      |      |      |      |      |      |      |       |      |      |       |
|------------------|------|------|------|------|------|------|------|------|-------|------|------|-------|
| Cnflict Vol:     | 1272 | 1244 | 551  | 1301 | 1256 | 658  | 659  | xxxx | xxxxx | 564  | xxxx | xxxxx |
| Potent Cap.:     | 146  | 176  | 538  | 139  | 173  | 468  | 939  | xxxx | xxxxx | 1018 | xxxx | xxxxx |
| Move Cap.:       | 109  | 173  | 538  | 95   | 170  | 468  | 939  | xxxx | xxxxx | 1018 | xxxx | xxxxx |
| Volume/Cap:      | 0.34 | 0.27 | 0.13 | 1.16 | 0.29 | 0.02 | 0.01 | xxxx | xxxx  | 0.01 | xxxx | xxxx  |

| Level Of Service Module: |       |      |       |       |       |       |         |      |       |         |      |       |
|--------------------------|-------|------|-------|-------|-------|-------|---------|------|-------|---------|------|-------|
| Queue:                   | xxxxx | xxxx | xxxxx | xxxxx | xxxx  | xxxxx | 0.0     | xxxx | xxxxx | 0.0     | xxxx | xxxxx |
| Stopped Del:             | xxxxx | xxxx | xxxxx | xxxxx | xxxx  | xxxxx | 8.9     | xxxx | xxxxx | 8.6     | xxxx | xxxxx |
| LOS by Move:             | *     | *    | *     | *     | *     | *     | A       | *    | *     | A       | *    | *     |
| Movement:                | LT    | LTR  | RT    | LT    | LTR   | RT    | LT      | LTR  | RT    | LT      | LTR  | RT    |
| Shared Cap.:             | xxxx  | 208  | xxxxx | xxxx  | 115   | xxxxx | xxxx    | xxxx | xxxxx | xxxx    | xxxx | xxxxx |
| SharedQueue:             | xxxxx | 4.9  | xxxxx | xxxxx | 12.1  | xxxxx | xxxxx   | xxxx | xxxxx | xxxxx   | xxxx | xxxxx |
| Shrd StpDel:             | xxxxx | 59.7 | xxxxx | xxxxx | 322   | xxxxx | xxxxx   | xxxx | xxxxx | xxxxx   | xxxx | xxxxx |
| Shared LOS:              | *     | F    | *     | *     | F     | *     | *       | *    | *     | *       | *    | *     |
| ApproachDel:             |       | 59.7 |       |       | 322.1 |       | xxxxxxx |      |       | xxxxxxx |      |       |
| ApproachLOS:             |       | F    |       |       | F     |       | *       |      |       | *       |      |       |

Sutter Medical Center  
 CUMULATIVE PLUS SUTTER PROGRAM PLUS TRINITY PROJECT  
 PM Peak Hour

Level Of Service Computation Report  
 2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*  
 Intersection #6397 27th St & L St  
 \*\*\*\*\*

Average Delay (sec/veh): 2.2 Worst Case Level Of Service: B[ 14.4]  
 \*\*\*\*\*

| Approach: | North Bound |   |   |   | South Bound |   |   |   | East Bound |   |   |   | West Bound |   |   |   |   |   |   |   |
|-----------|-------------|---|---|---|-------------|---|---|---|------------|---|---|---|------------|---|---|---|---|---|---|---|
| Movement: | L           | - | T | - | R           | L | - | T | -          | R | L | - | T          | - | R | L | - | T | - | R |

|          |           |   |   |   |           |   |   |   |              |   |   |   |              |   |   |   |   |   |   |   |
|----------|-----------|---|---|---|-----------|---|---|---|--------------|---|---|---|--------------|---|---|---|---|---|---|---|
| Control: | Stop Sign |   |   |   | Stop Sign |   |   |   | Uncontrolled |   |   |   | Uncontrolled |   |   |   |   |   |   |   |
| Rights:  | Include   |   |   |   | Include   |   |   |   | Include      |   |   |   | Include      |   |   |   |   |   |   |   |
| Lanes:   | 1         | 0 | 0 | 0 | 0         | 0 | 0 | 0 | 0            | 0 | 0 | 0 | 0            | 0 | 0 | 0 | 1 | 2 | 0 | 0 |

| Volume Module: | North Bound |      |      |      | South Bound |      |      |      | East Bound |      |      |      | West Bound |      |      |      |
|----------------|-------------|------|------|------|-------------|------|------|------|------------|------|------|------|------------|------|------|------|
| Base Vol:      | 51          | 0    | 0    | 0    | 0           | 0    | 0    | 0    | 0          | 0    | 0    | 0    | 145        | 773  | 0    | 0    |
| Growth Adj:    | 1.00        | 1.00 | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00 |
| Initial Bse:   | 51          | 0    | 0    | 0    | 0           | 0    | 0    | 0    | 0          | 0    | 0    | 0    | 145        | 773  | 0    | 0    |
| User Adj:      | 1.00        | 1.00 | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00 |
| PHF Adj:       | 1.00        | 1.00 | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00 |
| PHF Volume:    | 51          | 0    | 0    | 0    | 0           | 0    | 0    | 0    | 0          | 0    | 0    | 0    | 145        | 773  | 0    | 0    |
| Reduct Vol:    | 0           | 0    | 0    | 0    | 0           | 0    | 0    | 0    | 0          | 0    | 0    | 0    | 0          | 0    | 0    | 0    |
| Final Vol.:    | 51          | 0    | 0    | 0    | 0           | 0    | 0    | 0    | 0          | 0    | 0    | 0    | 145        | 773  | 0    | 0    |

| Critical Gap Module: | North Bound |      |        |        | South Bound |      |        |        | East Bound |      |        |        | West Bound |      |        |        |
|----------------------|-------------|------|--------|--------|-------------|------|--------|--------|------------|------|--------|--------|------------|------|--------|--------|
| Critical Gp:         | 6.4         | xxxx | xxxxxx | xxxxxx | xxxxxx      | xxxx | xxxxxx | xxxxxx | xxxxxx     | xxxx | xxxxxx | xxxxxx | 4.1        | xxxx | xxxxxx | xxxxxx |
| FollowUpTim:         | 3.5         | xxxx | xxxxxx | xxxxxx | xxxxxx      | xxxx | xxxxxx | xxxxxx | xxxxxx     | xxxx | xxxxxx | xxxxxx | 2.2        | xxxx | xxxxxx | xxxxxx |

| Capacity Module: | North Bound |      |        |        | South Bound |      |        |        | East Bound |      |        |        | West Bound |      |        |        |
|------------------|-------------|------|--------|--------|-------------|------|--------|--------|------------|------|--------|--------|------------|------|--------|--------|
| Cnflct Vol:      | 548         | xxxx | xxxxxx | xxxxxx | xxxxxx      | xxxx | xxxxxx | xxxxxx | xxxxxx     | xxxx | xxxxxx | xxxxxx | 0          | xxxx | xxxxxx | xxxxxx |
| Potent Cap.:     | 501         | xxxx | xxxxxx | xxxxxx | xxxxxx      | xxxx | xxxxxx | xxxxxx | xxxxxx     | xxxx | xxxxxx | xxxxxx | 900        | xxxx | xxxxxx | xxxxxx |
| Move Cap.:       | 434         | xxxx | xxxxxx | xxxxxx | xxxxxx      | xxxx | xxxxxx | xxxxxx | xxxxxx     | xxxx | xxxxxx | xxxxxx | 900        | xxxx | xxxxxx | xxxxxx |
| Volume/Cap:      | 0.12        | xxxx | xxxxxx | xxxxxx | xxxxxx      | xxxx | xxxxxx | xxxxxx | xxxxxx     | xxxx | xxxxxx | xxxxxx | 0.16       | xxxx | xxxxxx | xxxxxx |

| Level Of Service Module: | North Bound |      |        |        | South Bound |      |        |        | East Bound |      |        |        | West Bound |      |        |        |   |     |   |    |
|--------------------------|-------------|------|--------|--------|-------------|------|--------|--------|------------|------|--------|--------|------------|------|--------|--------|---|-----|---|----|
| Queue:                   | 0.4         | xxxx | xxxxxx | xxxxxx | xxxxxx      | xxxx | xxxxxx | xxxxxx | xxxxxx     | xxxx | xxxxxx | xxxxxx | 0.6        | xxxx | xxxxxx | xxxxxx |   |     |   |    |
| Stopped Del:             | 14.4        | xxxx | xxxxxx | xxxxxx | xxxxxx      | xxxx | xxxxxx | xxxxxx | xxxxxx     | xxxx | xxxxxx | xxxxxx | 9.8        | xxxx | xxxxxx | xxxxxx |   |     |   |    |
| LOS by Move:             | B           | *    | *      | *      | *           | *    | *      | *      | *          | *    | *      | *      | A          | *    | *      | *      |   |     |   |    |
| Movement:                | LT          | -    | LTR    | -      | RT          | LT   | -      | LTR    | -          | RT   | LT     | -      | LTR        | -    | RT     | LT     | - | LTR | - | RT |
| Shared Cap.:             | xxxx        | xxxx | xxxxxx | xxxxxx | xxxxxx      | xxxx | xxxxxx | xxxxxx | xxxxxx     | xxxx | xxxxxx | xxxxxx | xxxx       | xxxx | xxxxxx | xxxxxx |   |     |   |    |
| SharedQueue:             | xxxxxx      | xxxx | xxxxxx | xxxxxx | xxxxxx      | xxxx | xxxxxx | xxxxxx | xxxxxx     | xxxx | xxxxxx | xxxxxx | 0.6        | xxxx | xxxxxx | xxxxxx |   |     |   |    |
| Shrd StpDel:             | xxxxxx      | xxxx | xxxxxx | xxxxxx | xxxxxx      | xxxx | xxxxxx | xxxxxx | xxxxxx     | xxxx | xxxxxx | xxxxxx | 9.8        | xxxx | xxxxxx | xxxxxx |   |     |   |    |
| Shared LOS:              | *           | *    | *      | *      | *           | *    | *      | *      | *          | *    | *      | *      | A          | *    | *      | *      |   |     |   |    |
| ApproachDel:             | 14.4        |      |        |        | xxxxxx      |      |        |        | xxxxxx     |      |        |        | xxxxxx     |      |        |        |   |     |   |    |
| ApproachLOS:             | B           |      |        |        | *           |      |        |        | *          |      |        |        | *          |      |        |        |   |     |   |    |

CUMULATIVE NO PROJECT  
WITH CENTRAL CITY TWO WAY CONVERSION

AM Peak Hour

Unsignalized Intersections

(am10)



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Sutter Medical Center  
CUMULATIVE TWO-WAY NO PROJECT  
AM Peak Hour

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Signal Warrant Summary Report

| Intersection                | Base Met<br>[Del / Vol] | Future Met<br>[Del / Vol] |
|-----------------------------|-------------------------|---------------------------|
| #3434 26th St & N St        |                         |                           |
| #5800 26th St & K St        | No / No                 | ??? / ???                 |
| #6395 27th St & N St        | No / No                 | ??? / ???                 |
| #6396 Capitol Ave & 27th St | No / No                 | ??? / ???                 |
| #6397 27th St & L St        | No / No                 | ??? / ???                 |

Sutter Medical Center
CUMULATIVE TWO-WAY NO PROJECT
AM Peak Hour

Peak Hour Delay Signal Warrant Report

\*\*\*\*\*
Intersection #5800 26th St & K St
\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Stop Sign, Uncontrolled), Lanes (0 0 1! 0 0), Final Vol. (16 36 28, 3 29 16, 13 198 17, 14 646 29), and ApproachDel (19.7, 19.2, xxxxxx, xxxxxx).

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.4]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=80]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1045]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=48]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1045]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

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 Sutter Medical Center  
 CUMULATIVE TWO-WAY NO PROJECT  
 AM Peak Hour  
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Peak Hour Volume Signal Warrant Report [Urban]

\*\*\*\*\*

Intersection #5800 26th St & K St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:   | North Bound |    |        | South Bound |    |        | East Bound   |     |        | West Bound   |     |        |
|-------------|-------------|----|--------|-------------|----|--------|--------------|-----|--------|--------------|-----|--------|
| Movement:   | L           | T  | R      | L           | T  | R      | L            | T   | R      | L            | T   | R      |
| Control:    | Stop Sign   |    |        | Stop Sign   |    |        | Uncontrolled |     |        | Uncontrolled |     |        |
| Lanes:      | 0           | 0  | 1! 0 0 | 0           | 0  | 1! 0 0 | 0            | 0   | 1! 0 0 | 0            | 0   | 1! 0 0 |
| Final Vol.: | 16          | 36 | 28     | 3           | 29 | 16     | 13           | 198 | 17     | 14           | 646 | 29     |

Major Street Volume: 917  
 Minor Approach Volume: 80  
 Minor Approach Volume Threshold: 243

Sutter Medical Center
CUMULATIVE TWO-WAY NO PROJECT
AM Peak Hour

Peak Hour Delay Signal Warrant Report

\*\*\*\*\*

Intersection #6395 27th St & N St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Lanes, Final Vol., and ApproachDel.

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=22]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=937]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=10]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=937]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.



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 Sutter Medical Center  
 CUMULATIVE TWO-WAY NO PROJECT  
 AM Peak Hour  
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Peak Hour Volume Signal Warrant Report [Urban]

\*\*\*\*\*

Intersection #6395 27th St & N St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:   | North Bound |   |    | South Bound |   |   | East Bound   |     |   | West Bound   |     |    |
|-------------|-------------|---|----|-------------|---|---|--------------|-----|---|--------------|-----|----|
| Movement:   | L           | T | R  | L           | T | R | L            | T   | R | L            | T   | R  |
| Control:    | Stop Sign   |   |    | Stop Sign   |   |   | Uncontrolled |     |   | Uncontrolled |     |    |
| Lanes:      | 0           | 0 | 1  | 0           | 0 | 1 | 0            | 0   | 0 | 0            | 0   | 1  |
| Final Vol.: | 4           | 3 | 15 | 6           | 3 | 1 | 9            | 194 | 5 | 0            | 647 | 50 |

Major Street Volume: 905  
 Minor Approach Volume: 22  
 Minor Approach Volume Threshold: 246

Sutter Medical Center
CUMULATIVE TWO-WAY NO PROJECT
AM Peak Hour

Peak Hour Delay Signal Warrant Report

\*\*\*\*\*

Intersection #6396 Capitol Ave & 27th St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Stop Sign, Uncontrolled), Lanes (0 0 1! 0 0), Final Vol. (2 11 9, 27 13 9, 1 339 2, 6 629 17), and ApproachDel (16.8, 23.2, xxxxxx, xxxxxx).

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=22]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1065]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=49]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1065]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

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 Sutter Medical Center  
 CUMULATIVE TWO-WAY NO PROJECT  
 AM Peak Hour  
 -----

Peak Hour Volume Signal Warrant Report [Urban]

\*\*\*\*\*

Intersection #6396 Capitol Ave & 27th St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:                        | North Bound |    |        | South Bound |    |        | East Bound   |     |        | West Bound   |     |        |
|----------------------------------|-------------|----|--------|-------------|----|--------|--------------|-----|--------|--------------|-----|--------|
| Movement:                        | L           | T  | R      | L           | T  | R      | L            | T   | R      | L            | T   | R      |
| Control:                         | Stop Sign   |    |        | Stop Sign   |    |        | Uncontrolled |     |        | Uncontrolled |     |        |
| Lanes:                           | 0           | 0  | 1! 0 0 | 0           | 0  | 1! 0 0 | 0            | 0   | 1! 0 0 | 0            | 0   | 1! 0 0 |
| Final Vol.:                      | 2           | 11 | 9      | 27          | 13 | 9      | 1            | 339 | 2      | 6            | 629 | 17     |
| Major Street Volume:             |             |    |        |             |    |        | 994          |     |        |              |     |        |
| Minor Approach Volume:           |             |    |        |             |    |        | 49           |     |        |              |     |        |
| Minor Approach Volume Threshold: |             |    |        |             |    |        | 221          |     |        |              |     |        |

Sutter Medical Center  
CUMULATIVE TWO-WAY NO PROJECT  
AM Peak Hour

Peak Hour Delay Signal Warrant Report

\*\*\*\*\*

Intersection #6397 27th St & L St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:    | North Bound |   |   | South Bound |   |   | East Bound   |     |   | West Bound   |     |   |
|--------------|-------------|---|---|-------------|---|---|--------------|-----|---|--------------|-----|---|
| Movement:    | L           | T | R | L           | T | R | L            | T   | R | L            | T   | R |
| Control:     | Stop Sign   |   |   | Stop Sign   |   |   | Uncontrolled |     |   | Uncontrolled |     |   |
| Lanes:       | 1           | 0 | 0 | 0           | 0 | 1 | 0            | 0   | 1 | 0            | 1   | 0 |
| Final Vol.:  | 31          | 0 | 0 | 0           | 0 | 0 | 0            | 372 | 6 | 43           | 369 | 0 |
| ApproachDel: | 16.9        |   |   | xxxxxxx     |   |   | xxxxxxx      |     |   | xxxxxxx      |     |   |

Approach[northbound] [lanes=1] [control=Stop]

Signal Warrant Rule #1: [vehicle-hours=0.1]

FAIL - Vehicle-hours less than 4 for one lane approach.

Signal Warrant Rule #2: [approach volume=31]

FAIL - Approach volume less than 100 for one lane approach.

Signal Warrant Rule #3: [approach count=3] [total volume=821]

SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

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 Sutter Medical Center  
 CUMULATIVE TWO-WAY NO PROJECT  
 AM Peak Hour  
 -----

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 Peak Hour Volume Signal Warrant Report [Urban]  
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Intersection #6397 27th St & L St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:   | North Bound |   |   |   | South Bound |   |   |   | East Bound   |     |   |   | West Bound   |     |   |   |
|-------------|-------------|---|---|---|-------------|---|---|---|--------------|-----|---|---|--------------|-----|---|---|
| Movement:   | L           | T | R |   | L           | T | R |   | L            | T   | R |   | L            | T   | R |   |
| Control:    | Stop Sign   |   |   |   | Stop Sign   |   |   |   | Uncontrolled |     |   |   | Uncontrolled |     |   |   |
| Lanes:      | 1           | 0 | 0 | 0 | 0           | 0 | 1 | 0 | 0            | 0   | 0 | 1 | 0            | 0   | 1 | 0 |
| Final Vol.: | 31          | 0 | 0 | 0 | 0           | 0 | 0 | 0 | 0            | 372 | 6 | 6 | 43           | 369 | 0 | 0 |

Major Street Volume: 790  
 Minor Approach Volume: 31  
 Minor Approach Volume Threshold: 282

Sutter Medical Center
CUMULATIVE TWO-WAY NO PROJECT
AM Peak Hour

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #3434 26th St & N St

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.797

Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 18.0

Optimal Cycle: 0 Level Of Service: C

\*\*\*\*\*

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Stop Sign Stop Sign

Rights: Include Include Include Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Lanes: 0 0 1! 0 0 0 0 0 1 0 0 0 0 0 0 1! 0 0

Volume Module:

Table with 13 columns and 13 rows showing volume data: Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Vol.

Saturation Flow Module:

Table with 13 columns and 3 rows showing saturation flow data: Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with 13 columns and 11 rows showing capacity analysis data: Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr.

\*\*\*\*\*

Sutter Medical Center
CUMULATIVE TWO-WAY NO PROJECT
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #5800 26th St & K St
\*\*\*\*\*

Average Delay (sec/veh): 2.6 Worst Case Level Of Service: C[ 19.7]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns for traffic volumes. Rows include Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Vol.

Critical Gap Module: Table with 13 columns for critical gaps and follow-up times. Rows include Critical Gp and FollowUpTim.

Capacity Module: Table with 13 columns for capacity-related metrics. Rows include Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module: Table with 13 columns for level of service metrics. Rows include Queue, Stopped Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd StpDel, Shared LOS, ApproachDel, and ApproachLOS.

Sutter Medical Center
CUMULATIVE TWO-WAY NO PROJECT
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #6395 27th St & N St
\*\*\*\*\*

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: C [ 18.6]

Table with columns for Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Lanes, Volume Module, and Critical Gap Module.

Table with columns for Critical Gap Module. Rows include Critical Gp and FollowUpTim.

Table with columns for Capacity Module. Rows include Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Table with columns for Level Of Service Module. Rows include Queue, Stopped Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd StpDel, Shared LOS, ApproachDel, and ApproachLOS.



Sutter Medical Center
CUMULATIVE TWO-WAY NO PROJECT
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #6396 Capitol Ave & 27th St
\*\*\*\*\*

Average Delay (sec/veh): 1.5 Worst Case Level Of Service: C[ 23.2]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns for traffic movements and 4 rows for Base Vol, Growth Adj, Initial Bse, and PHF Volume.

Critical Gap Module: Table with 12 columns for traffic movements and 2 rows for Critical Gp and FollowUpTim.

Capacity Module: Table with 12 columns for traffic movements and 4 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module: Table with 12 columns for traffic movements and 10 rows for Queue, Stopped Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd StpDel, Shared LOS, ApproachDel, and ApproachLOS.

Sutter Medical Center
CUMULATIVE TWO-WAY NO PROJECT
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #6397 27th St & L St
\*\*\*\*\*

Average Delay (sec/veh): 1.1 Worst Case Level Of Service: C[ 16.9]

\*\*\*\*\*
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Table with 4 columns for North, South, East, and West Bound movements. Rows include Control (Stop Sign, Uncontrolled), Rights (Include), and Lanes (1 0 0 0 0).

Volume Module: Table with 13 columns for volume and adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Vol.

Critical Gap Module: Table with 13 columns for critical gap and follow-up time. Rows include Critical Gp and FollowUpTim.

Capacity Module: Table with 13 columns for capacity and volume. Rows include Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module: Table with 13 columns for level of service. Rows include Queue, Stopped Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd StpDel, Shared LOS, ApproachDel, and ApproachLOS.

CUMULATIVE NO PROJECT  
WITH CENTRAL CITY TWO WAY CONVERSION

PM Peak Hour

Unsignalized Intersections

(pm10)



Sutter Medical Center  
CUMULATIVE TWO-WAY NO PROJECT  
PM Peak Hour

Signal Warrant Summary Report

| Intersection                | Base Met<br>[Del / Vol] | Future Met<br>[Del / Vol] |
|-----------------------------|-------------------------|---------------------------|
| #3434 26th St & N St        |                         |                           |
| #5800 26th St & K St        | No / No                 | ??? / ???                 |
| #6395 27th St & N St        | No / No                 | ??? / ???                 |
| #6396 Capitol Ave & 27th St | No / No                 | ??? / ???                 |
| #6397 27th St & L St        | No / No                 | ??? / ???                 |

Sutter Medical Center
CUMULATIVE TWO-WAY NO PROJECT
PM Peak Hour

Peak Hour Delay Signal Warrant Report

\*\*\*\*\*

Intersection #5800 26th St & K St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Lanes, Final Vol., and ApproachDel.

Approach[northbound] [lanes=1] [control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.9]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=82]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1421]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[southbound] [lanes=1] [control=Stop]
Signal Warrant Rule #1: [vehicle-hours=1.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=91]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1421]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Sutter Medical Center  
 CUMULATIVE TWO-WAY NO PROJECT  
 PM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

\*\*\*\*\*  
 Intersection #5800 26th St & K St  
 \*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:   | North Bound |    |    | South Bound |    |    | East Bound   |     |    | West Bound   |     |    |
|-------------|-------------|----|----|-------------|----|----|--------------|-----|----|--------------|-----|----|
| Movement:   | L           | T  | R  | L           | T  | R  | L            | T   | R  | L            | T   | R  |
| Control:    | Stop Sign   |    |    | Stop Sign   |    |    | Uncontrolled |     |    | Uncontrolled |     |    |
| Lanes:      | 0           | 0  | 1! | 0           | 0  | 0  | 0            | 0   | 1! | 0            | 0   | 0  |
| Final Vol.: | 5           | 57 | 20 | 14          | 43 | 34 | 15           | 521 | 17 | 23           | 642 | 30 |

Major Street Volume: 1248  
 Minor Approach Volume: 91  
 Minor Approach Volume Threshold: 160

Sutter Medical Center
CUMULATIVE TWO-WAY NO PROJECT
PM Peak Hour

Peak Hour Delay Signal Warrant Report

\*\*\*\*\*
Intersection #6395 27th St & N St
\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Stop Sign, Uncontrolled), Lanes (0 0 1! 0 0), Final Vol. (4 7 12, 78 5 0, 12 291 20, 1 577 27), and ApproachDel (14.8, 27.6, xxxxxx, xxxxxx).

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=23]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1034]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.6]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=83]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1034]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.



Sutter Medical Center  
 CUMULATIVE TWO-WAY NO PROJECT  
 PM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

\*\*\*\*\*

Intersection #6395 27th St & N St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:   | North Bound |   |    | South Bound |   |   | East Bound   |     |    | West Bound   |     |    |
|-------------|-------------|---|----|-------------|---|---|--------------|-----|----|--------------|-----|----|
| Movement:   | L           | T | R  | L           | T | R | L            | T   | R  | L            | T   | R  |
| Control:    | Stop Sign   |   |    | Stop Sign   |   |   | Uncontrolled |     |    | Uncontrolled |     |    |
| Lanes:      | 0           | 0 | 1! | 0           | 0 | 0 | 0            | 1   | 0  | 0            | 0   | 0  |
| Final Vol.: | 4           | 7 | 12 | 78          | 5 | 0 | 12           | 291 | 20 | 1            | 577 | 27 |

Major Street Volume: 928

Minor Approach Volume: 83

Minor Approach Volume Threshold: 239

Sutter Medical Center
CUMULATIVE TWO-WAY NO PROJECT
PM Peak Hour

Peak Hour Delay Signal Warrant Report

\*\*\*\*\*
Intersection #6396 Capitol Ave & 27th St
\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Stop Sign, Uncontrolled), Lanes (0 0 1! 0 0), Final Vol. (4 14 14, 30 11 11, 1 654 6, 5 684 3), and ApproachDel (26.1, 44.2, xxxxxx, xxxxxx).

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=32]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1437]
SUCCEED - Total volume greater than or equal to 800 for intersection
with four or more approaches.

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.6]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=52]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1437]
SUCCEED - Total volume greater than or equal to 800 for intersection
with four or more approaches.

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 Sutter Medical Center  
 CUMULATIVE TWO-WAY NO PROJECT  
 PM Peak Hour  
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-----  
 Peak Hour Volume Signal Warrant Report [Urban]  
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\*\*\*\*\*

Intersection #6396 Capitol Ave & 27th St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:   | North Bound |    |        | South Bound |    |        | East Bound   |     |        | West Bound   |     |        |
|-------------|-------------|----|--------|-------------|----|--------|--------------|-----|--------|--------------|-----|--------|
| Movement:   | L           | T  | R      | L           | T  | R      | L            | T   | R      | L            | T   | R      |
| Control:    | Stop Sign   |    |        | Stop Sign   |    |        | Uncontrolled |     |        | Uncontrolled |     |        |
| Lanes:      | 0           | 0  | 1! 0 0 | 0           | 0  | 1! 0 0 | 0            | 0   | 1! 0 0 | 0            | 0   | 1! 0 0 |
| Final Vol.: | 4           | 14 | 14     | 30          | 11 | 11     | 1            | 654 | 6      | 5            | 684 | 3      |

-----  
 Major Street Volume: 1353  
 Minor Approach Volume: 52  
 Minor Approach Volume Threshold: 139

Sutter Medical Center  
CUMULATIVE TWO-WAY NO PROJECT  
PM Peak Hour

Peak Hour Delay Signal Warrant Report

\*\*\*\*\*

Intersection #6397 27th St & L St

\*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:    | North Bound |   |   |   | South Bound |   |   |   | East Bound   |   |   |   | West Bound   |   |   |    |   |     |   |   |
|--------------|-------------|---|---|---|-------------|---|---|---|--------------|---|---|---|--------------|---|---|----|---|-----|---|---|
| Movement:    | L           | - | T | - | R           | L | - | T | -            | R | L | - | T            | - | R | L  | - | T   | - | R |
| Control:     | Stop Sign   |   |   |   | Stop Sign   |   |   |   | Uncontrolled |   |   |   | Uncontrolled |   |   |    |   |     |   |   |
| Lanes:       | 0           | 0 | 1 | 0 | 0           | 0 | 0 | 1 | 0            | 0 | 0 | 0 | 0            | 1 | 0 | 0  | 1 | 0   | 0 | 0 |
| Final Vol.:  | 20          |   | 0 |   | 5           | 0 |   | 0 |              | 0 | 0 |   | 456          |   | 9 | 20 |   | 181 |   | 0 |
| ApproachDel: | 13.7        |   |   |   | xxxxxx      |   |   |   | xxxxxx       |   |   |   | xxxxxx       |   |   |    |   |     |   |   |

Approach[northbound][lanes=1][control=Stop]

Signal Warrant Rule #1: [vehicle-hours=0.1]

FAIL - Vehicle-hours less than 4 for one lane approach.

Signal Warrant Rule #2: [approach volume=25]

FAIL - Approach volume less than 100 for one lane approach.

Signal Warrant Rule #3: [approach count=3][total volume=691]

SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Sutter Medical Center  
 CUMULATIVE TWO-WAY NO PROJECT  
 PM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

\*\*\*\*\*  
 Intersection #6397 27th St & L St  
 \*\*\*\*\*

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach:                        | North Bound |   |   |   | South Bound |   |   |   | East Bound   |   |     |   | West Bound   |   |    |     |   |   |   |
|----------------------------------|-------------|---|---|---|-------------|---|---|---|--------------|---|-----|---|--------------|---|----|-----|---|---|---|
| Movement:                        | L           | T | R |   | L           | T | R |   | L            | T | R   |   | L            | T | R  |     |   |   |   |
| Control:                         | Stop Sign   |   |   |   | Stop Sign   |   |   |   | Uncontrolled |   |     |   | Uncontrolled |   |    |     |   |   |   |
| Lanes:                           | 0           | 0 | 1 | 0 | 0           | 0 | 1 | 0 | 0            | 0 | 0   | 0 | 1            | 0 | 0  | 1   | 0 | 0 | 0 |
| Final Vol.:                      | 20          | 0 | 0 | 5 | 0           | 0 | 0 | 0 | 0            | 0 | 456 | 9 | 0            | 0 | 20 | 181 | 0 | 0 | 0 |
| Major Street Volume:             |             |   |   |   |             |   |   |   | 666          |   |     |   |              |   |    |     |   |   |   |
| Minor Approach Volume:           |             |   |   |   |             |   |   |   | 25           |   |     |   |              |   |    |     |   |   |   |
| Minor Approach Volume Threshold: | 328         |   |   |   |             |   |   |   |              |   |     |   |              |   |    |     |   |   |   |

Sutter Medical Center
CUMULATIVE TWO-WAY NO PROJECT
PM Peak Hour

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #3434 26th St & N St
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.782
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 17.5
Optimal Cycle: 0 Level Of Service: C
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns for different traffic movements and rows for Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Vol.

Saturation Flow Module: Table with 12 columns for different traffic movements and rows for Adjustment, Lanes, Final Sat.

Capacity Analysis Module: Table with 12 columns for different traffic movements and rows for Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr.

Sutter Medical Center
CUMULATIVE TWO-WAY NO PROJECT
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #5800 26th St & K St
\*\*\*\*\*

Average Delay (sec/veh): 5.1 Worst Case Level Of Service: E [ 40.9]
\*\*\*\*\*

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns for volume metrics (Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Vol) across four directions.

Critical Gap Module: Table with 13 columns for gap metrics (Critical Gp, FollowUpTim) across four directions.

Capacity Module: Table with 13 columns for capacity metrics (Cnflct Vol, Potent Cap., Move Cap., Volume/Cap) across four directions.

Level Of Service Module: Table with 13 columns for LOS metrics (Queue, Stopped Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd StpDel, Shared LOS, ApproachDel, ApproachLOS) across four directions.

Sutter Medical Center
CUMULATIVE TWO-WAY NO PROJECT
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #6395 27th St & N St
\*\*\*\*\*

Average Delay (sec/veh): 2.7 Worst Case Level Of Service: D[ 27.6]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns for traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Vol.

Critical Gap Module: Table with 12 columns for traffic movements. Rows include Critical Gp and FollowUpTim.

Capacity Module: Table with 12 columns for traffic movements. Rows include Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module: Table with 12 columns for traffic movements. Rows include Queue, Stopped Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd StpDel, Shared LOS, ApproachDel, and ApproachLOS.



Sutter Medical Center
CUMULATIVE TWO-WAY NO PROJECT
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #6396 Capitol Ave & 27th St
\*\*\*\*\*

Average Delay (sec/veh): 2.2 Worst Case Level Of Service: E [ 44.2]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns for volume and growth factors across four approaches.

Critical Gap Module: Table with 12 columns for critical gap and follow-up time.

Capacity Module: Table with 12 columns for conflict volume, potential capacity, and volume/capacity.

Level Of Service Module: Table with 12 columns for queue, stopped delay, and approach delay.

Sutter Medical Center
CUMULATIVE TWO-WAY NO PROJECT
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #6397 27th St & L St

\*\*\*\*\*

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: B[ 13.7]

\*\*\*\*\*

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Uncontrolled Uncontrolled
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 0 1! 0 0 0 0 0 1 0 0 0

Volume Module:

Base Vol: 20 0 5 0 0 0 0 456 9 20 181 0
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 20 0 5 0 0 0 0 456 9 20 181 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 20 0 5 0 0 0 0 456 9 20 181 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Final Vol.: 20 0 5 0 0 0 0 456 9 20 181 0

Critical Gap Module:

Critical Gp: 6.4 xxxxx 6.2 xxxxxx xxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx 4.1 xxxxx xxxxxx
FollowUpTim: 3.5 xxxxx 3.3 xxxxxx xxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx 2.2 xxxxx xxxxxx

Capacity Module:

Cnflct Vol: 682 xxxxx 461 xxxxx xxxxx xxxxxx xxxxxx xxxxxx xxxxxx 465 xxxxx xxxxxx
Potent Cap.: 419 xxxxx 605 xxxxx xxxxx xxxxxx xxxxxx xxxxxx xxxxxx 1107 xxxxx xxxxxx
Move Cap.: 413 xxxxx 605 xxxxx xxxxx xxxxxx xxxxxx xxxxxx xxxxxx 1107 xxxxx xxxxxx
Volume/Cap: 0.05 xxxxx 0.01 xxxxx xxxxx xxxxxx xxxxxx xxxxxx xxxxxx 0.02 xxxxx xxxxxx

Level Of Service Module:

Queue: xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx 0.1 xxxxx xxxxxx
Stopped Del: xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx 8.3 xxxxx xxxxxx
LOS by Move: \* \* \* \* \* \* \* \* \* \*
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx 441 xxxxxx xxxxx 0 xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
SharedQueue: xxxxxx 0.2 xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx 0.1 xxxxx xxxxxx
Shrd StpDel: xxxxxx 13.7 xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx 8.3 xxxxx xxxxxx
Shared LOS: \* B \* \* \* \* \* \* \* \*
ApproachDel: 13.7 xxxxxx xxxxxx xxxxxx
ApproachLOS: B \* \* \*

CUMULATIVE PLUS SUTTER PROJECT  
WITH CENTRAL CITY TWO WAY CONVERSION

AM Peak Hour

Unsignalized Intersections

(am11)



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Sutter Medical Center  
CUMULATIVE TWO-WAY PLUS SUTTER PROJCT  
AM Peak Hour

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## Scenario Report

Scenario: am11FU2sp  
Command: am11FU2sp  
Volume: am11FU2sp  
Geometry: am11FU2sp  
Impact Fee: Default Impact Fee  
Trip Generation: Default Trip Generation  
Trip Distribution: Default Trip Distribution  
Paths: Default Paths  
Routes: Default Routes  
Configuration: Default Configuration

Sutter Medical Center  
 CUMULATIVE TWO-WAY PLUS SUTTER PROJCT  
 AM Peak Hour

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Base Volume Alternative)

\*\*\*\*\*  
 Intersection #3434 26th St & N St  
 \*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.776  
 Lost Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 16.9  
 Optimal Cycle: 0 Level Of Service: C  
 \*\*\*\*\*

| Approach:   | North Bound |   |   | South Bound |   |   | East Bound |   |   | West Bound |   |   |
|-------------|-------------|---|---|-------------|---|---|------------|---|---|------------|---|---|
| Movement:   | L           | T | R | L           | T | R | L          | T | R | L          | T | R |
| Control:    | Stop Sign   |   |   | Stop Sign   |   |   | Stop Sign  |   |   | Stop Sign  |   |   |
| Rights:     | Include     |   |   | Include     |   |   | Include    |   |   | Include    |   |   |
| Min. Green: | 0           | 0 | 0 | 0           | 0 | 0 | 0          | 0 | 0 | 0          | 0 | 0 |
| Lanes:      | 0           | 0 | 1 | 0           | 0 | 1 | 0          | 0 | 1 | 0          | 0 | 1 |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 4    | 55   | 13   | 5    | 19   | 5    | 62   | 184  | 6    | 0    | 618  | 1    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 4    | 55   | 13   | 5    | 19   | 5    | 62   | 184  | 6    | 0    | 618  | 1    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 4    | 55   | 13   | 5    | 19   | 5    | 62   | 184  | 6    | 0    | 618  | 1    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 4    | 55   | 13   | 5    | 19   | 5    | 62   | 184  | 6    | 0    | 618  | 1    |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Final Vol.:  | 4    | 55   | 13   | 5    | 19   | 5    | 62   | 184  | 6    | 0    | 618  | 1    |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 0.06 | 0.76 | 0.18 | 0.17 | 0.66 | 0.17 | 0.25 | 0.73 | 0.02 | 0.00 | 0.99 | 0.01 |
| Final Sat.: | 32   | 436  | 103  | 95   | 363  | 95   | 176  | 522  | 17   | 0    | 796  | 1    |

Capacity Analysis Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:     | 0.13 | 0.13 | 0.13 | 0.05 | 0.05 | 0.05 | 0.35 | 0.35 | 0.35 | xxxx | 0.78 | 0.78 |
| Crit Moves:  | **** |      |      | **** |      |      | **** |      |      | **** |      |      |
| Delay/Veh:   | 9.5  | 9.5  | 9.5  | 9.1  | 9.1  | 9.1  | 10.4 | 10.4 | 10.4 | 0.0  | 20.8 | 20.8 |
| Delay Adj:   | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh:  | 9.5  | 9.5  | 9.5  | 9.1  | 9.1  | 9.1  | 10.4 | 10.4 | 10.4 | 0.0  | 20.8 | 20.8 |
| LOS by Move: | A    | A    | A    | A    | A    | A    | B    | B    | B    | *    | C    | C    |
| ApproachDel: | 9.5  |      |      | 9.1  |      |      | 10.4 |      |      | 20.8 |      |      |
| Delay Adj:   | 1.00 |      |      | 1.00 |      |      | 1.00 |      |      | 1.00 |      |      |
| ApprAdjDel:  | 9.5  |      |      | 9.1  |      |      | 10.4 |      |      | 20.8 |      |      |
| LOS by Appr: | A    |      |      | A    |      |      | B    |      |      | C    |      |      |

\*\*\*\*\*

Sutter Medical Center
CUMULATIVE TWO-WAY PLUS SUTTER PROJCT
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #5800 26th St & K St
\*\*\*\*\*

Average Delay (sec/veh): 3.0 Worst Case Level Of Service: C[ 22.0]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns for traffic volumes and adjustment factors (Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Vol).

Critical Gap Module: Table with 13 columns for critical gap and follow-up times.

Capacity Module: Table with 13 columns for capacity-related metrics (Conflict Vol, Potent Cap., Move Cap., Volume/Cap).

Level of Service Module: Table with 13 columns for queue lengths, stopped delays, LOS by move, shared capacity, and approach delays.

Sutter Medical Center
CUMULATIVE TWO-WAY PLUS SUTTER PROJCT
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #6395 27th St & N St
\*\*\*\*\*

Average Delay (sec/veh): 2.6 Worst Case Level Of Service: C[ 20.1]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns for volume metrics (Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Vol) across four directions.

Critical Gap Module: Table with 13 columns for gap metrics (Critical Gp, FollowUpTim) across four directions.

Capacity Module: Table with 13 columns for capacity metrics (Cnflct Vol, Potent Cap., Move Cap., Volume/Cap) across four directions.

Level Of Service Module: Table with 13 columns for LOS metrics (Queue, Stopped Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd StpDel, Shared LOS, ApproachDel, ApproachLOS) across four directions.



Sutter Medical Center
CUMULATIVE TWO-WAY PLUS SUTTER PROJCT
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #6396 Capitol Ave & 27th St
\*\*\*\*\*

Average Delay (sec/veh): 3.5 Worst Case Level Of Service: C[ 24.7]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns for traffic movements and 4 rows for Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Vol.

Critical Gap Module: Table with 13 columns for traffic movements and 2 rows for Critical Gp, FollowUpTim.

Capacity Module: Table with 13 columns for traffic movements and 4 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module: Table with 13 columns for traffic movements and 8 rows for Queue, Stopped Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd StpDel, Shared LOS, ApproachDel, ApproachLOS.

Sutter Medical Center
CUMULATIVE TWO-WAY PLUS SUTTER PROJCT
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #6397 27th St & L St
\*\*\*\*\*

Average Delay (sec/veh): 1.4 Worst Case Level Of Service: C[ 17.5]
\*\*\*\*\*

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Uncontrolled Uncontrolled
Rights: Include Include Include Include
Lanes: 1 0 0 0 0 0 0 1! 0 0 0 0 0 1 0 0 0 1 0 0 0 0

Volume Module:
Base Vol: 36 0 0 0 0 0 0 0 363 16 64 342 0
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 36 0 0 0 0 0 0 0 363 16 64 342 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 36 0 0 0 0 0 0 0 363 16 64 342 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Final Vol.: 36 0 0 0 0 0 0 0 363 16 64 342 0

Critical Gap Module:
Critical Gp: 6.4 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx 4.1 xxxxx xxxxxx
FollowUpTim: 3.5 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx 2.2 xxxxx xxxxxx

Capacity Module:
Cnflct Vol: 841 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx 379 xxxxx xxxxxx
Potent Cap.: 338 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx 1191 xxxxx xxxxxx
Move Cap.: 323 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx 1191 xxxxx xxxxxx
Volume/Cap: 0.11 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.05 xxxxx xxxxx

Level Of Service Module:
Queue: 0.4 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx 0.2 xxxxx xxxxxx
Stopped Del: 17.5 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx 8.2 xxxxx xxxxxx
LOS by Move: C \* \* \* \* \* \* \* \* \* \* A \* \*
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxxx xxxxx 0 xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
SharedQueue: xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx 0.2 xxxxx xxxxxx
Shrd StpDel: xxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx 8.2 xxxxx xxxxxx
Shared LOS: \* \* \* \* \* \* \* \* \* \* A \* \*
ApproachDel: 17.5 xxxxxxxx xxxxxxxx xxxxxxxx
ApproachLOS: C \* \* \*

CUMULATIVE PLUS SUTTER PROJECT  
WITH CENTRAL CITY TWO WAY CONVERSION

PM Peak Hour

Unsignalized Intersections

(pm11)



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Sutter Medical Center  
CUMULATIVE TWO-WAY PLUS SUTTER PROJCT  
PM Peak Hour

---

## Scenario Report

Scenario: pm11FU2sp  
Command: pm11FU2sp  
Volume: pm11FU2sp  
Geometry: pm11FU2sp  
Impact Fee: Default Impact Fee  
Trip Generation: Default Trip Generation  
Trip Distribution: Default Trip Distribution  
Paths: Default Paths  
Routes: Default Routes  
Configuration: Default Configuration

Sutter Medical Center
CUMULATIVE TWO-WAY PLUS SUTTER PROJCT
PM Peak Hour

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #3434 26th St & N St

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.813

Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 19.1

Optimal Cycle: 0 Level Of Service: C

\*\*\*\*\*

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Stop Sign Stop Sign

Rights: Include Include Include Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Lanes: 0 0 1! 0 0 0 0 1! 0 0 0 1 0 0 0

-----

Volume Module:

Base Vol: 3 49 17 9 36 20 34 348 18 1 604 0

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 3 49 17 9 36 20 34 348 18 1 604 0

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 3 49 17 9 36 20 34 348 18 1 604 0

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 3 49 17 9 36 20 34 348 18 1 604 0

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Final Vol.: 3 49 17 9 36 20 34 348 18 1 604 0

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Saturation Flow Module:

Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Lanes: 0.04 0.71 0.25 0.14 0.55 0.31 0.08 0.87 0.05 0.01 0.99 0.00

Final Sat.: 23 376 130 73 293 163 60 611 32 1 743 0

-----

Capacity Analysis Module:

Vol/Sat: 0.13 0.13 0.13 0.12 0.12 0.12 0.57 0.57 0.57 0.81 0.81 xxxxx

Crit Moves: \*\*\*\* \*\*\*\* \*\*\*\*

Delay/Veh: 9.9 9.9 9.9 9.9 9.9 9.9 14.1 14.1 14.1 24.5 24.5 0.0

Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

AdjDel/Veh: 9.9 9.9 9.9 9.9 9.9 9.9 14.1 14.1 14.1 24.5 24.5 0.0

LOS by Move: A A A A A A B B B C C \*

ApproachDel: 9.9 9.9 14.1 24.5

Delay Adj: 1.00 1.00 1.00

ApprAdjDel: 9.9 9.9 14.1 24.5

LOS by Appr: A A B C

\*\*\*\*\*

Sutter Medical Center
CUMULATIVE TWO-WAY PLUS SUTTER PROJCT
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #5800 26th St & K St
\*\*\*\*\*

Average Delay (sec/veh): 5.6 Worst Case Level Of Service: E[ 43.3]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns for traffic volumes and adjustment factors (Base Vol, Growth Adj, Initial Bse, etc.).

Critical Gap Module: Table with 13 columns for critical gap and follow-up times.

Capacity Module: Table with 13 columns for conflict volumes, potential capacity, and volume/capacity ratios.

Level Of Service Module: Table with 13 columns for queue lengths, stopped delay, and approach delay/LOS.

Sutter Medical Center
CUMULATIVE TWO-WAY PLUS SUTTER PROJCT
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #6395 27th St & N St
\*\*\*\*\*

Average Delay (sec/veh): 8.1 Worst Case Level Of Service: F[100.9]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 12 columns for volume and adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Vol.

Critical Gap Module: Table with 12 columns for gap and follow-up time. Rows include Critical Gp and FollowUpTim.

Capacity Module: Table with 12 columns for capacity and volume. Rows include Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module: Table with 12 columns for queue, delay, and LOS. Rows include Queue, Stopped Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd StpDel, Shared LOS, ApproachDel, and ApproachLOS.



Sutter Medical Center
CUMULATIVE TWO-WAY PLUS SUTTER PROJCT
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #6396 Capitol Ave & 27th St
\*\*\*\*\*

Average Delay (sec/veh): 3.3 Worst Case Level Of Service: C[ 15.5]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns for traffic movements and 4 rows for Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Vol.

Critical Gap Module: Table with 13 columns for traffic movements and 2 rows for Critical Gp, FollowUpTim.

Capacity Module: Table with 13 columns for traffic movements and 4 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module: Table with 13 columns for traffic movements and 8 rows for Queue, Stopped Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd StpDel, Shared LOS, ApproachDel, ApproachLOS.

Sutter Medical Center
CUMULATIVE TWO-WAY PLUS SUTTER PROJCT
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #6397 27th St & L St
\*\*\*\*\*

Average Delay (sec/veh): 1.1 Worst Case Level Of Service: C[ 15.0]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns for volume adjustments. Rows include Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Vol.

Critical Gap Module: Table with 13 columns for gap and follow-up times. Rows include Critical Gp and FollowUpTim.

Capacity Module: Table with 13 columns for capacity and volume. Rows include Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module: Table with 13 columns for service metrics. Rows include Queue, Stopped Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd StpDel, Shared LOS, ApproachDel, and ApproachLOS.

CUMULATIVE PLUS SUTTER PROGRAM PLUS TRINITY PROJECT  
WITH CENTRAL CITY TWO WAY CONVERSION

AM Peak Hour

Unsignalized Intersections

(am12)



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Sutter Medical Center  
CUMULATIVE TWO-WAY PLUS SUTTER PROGRAM PLUS TRINITY PROJECT  
AM Peak Hour

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## Scenario Report

Scenario: am12FU2sptp  
Command: am12FU2sptp  
Volume: am12FU2sptp  
Geometry: am12FU2sptp  
Impact Fee: Default Impact Fee  
Trip Generation: Default Trip Generation  
Trip Distribution: Default Trip Distribution  
Paths: Default Paths  
Routes: Default Routes  
Configuration: Default Configuration

Sutter Medical Center  
 CUMULATIVE TWO-WAY PLUS SUTTER PROGRAM PLUS TRINITY PROJECT  
 AM Peak Hour

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #3434 26th St & N St

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.831

Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 19.9

Optimal Cycle: 0 Level Of Service: C

\*\*\*\*\*

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Stop Sign Stop Sign

Rights: Include Include Include Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0

Lanes: 0 0 1! 0 0 0 0 1! 0 0 0 0 1! 0 0 0 0 1 0

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 3    | 54   | 13   | 5    | 19   | 4    | 58   | 173  | 6    | 0    | 666  | 1    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 3    | 54   | 13   | 5    | 19   | 4    | 58   | 173  | 6    | 0    | 666  | 1    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 3    | 54   | 13   | 5    | 19   | 4    | 58   | 173  | 6    | 0    | 666  | 1    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced Vol: | 3    | 54   | 13   | 5    | 19   | 4    | 58   | 173  | 6    | 0    | 666  | 1    |
| PCE Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Final Vol.:  | 3    | 54   | 13   | 5    | 19   | 4    | 58   | 173  | 6    | 0    | 666  | 1    |

Saturation Flow Module:

|             |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes:      | 0.04 | 0.77 | 0.19 | 0.18 | 0.68 | 0.14 | 0.24 | 0.73 | 0.03 | 0.00 | 0.99 | 0.01 |
| Final Sat.: | 25   | 444  | 107  | 99   | 377  | 79   | 173  | 517  | 18   | 0    | 801  | 1    |

Capacity Analysis Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Vol/Sat:     | 0.12 | 0.12 | 0.12 | 0.05 | 0.05 | 0.05 | 0.33 | 0.33 | 0.33 | xxxx | 0.83 | 0.83 |
| Crit Moves:  | **** |      |      |      |      | **** |      |      | **** |      |      | **** |
| Delay/Veh:   | 9.5  | 9.5  | 9.5  | 9.2  | 9.2  | 9.2  | 10.3 | 10.3 | 10.3 | 0.0  | 24.9 | 24.9 |
| Delay Adj:   | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh:  | 9.5  | 9.5  | 9.5  | 9.2  | 9.2  | 9.2  | 10.3 | 10.3 | 10.3 | 0.0  | 24.9 | 24.9 |
| LOS by Move: | A    | A    | A    | A    | A    | A    | B    | B    | B    | *    | C    | C    |
| ApproachDel: |      | 9.5  |      |      | 9.2  |      |      | 10.3 |      |      | 24.9 |      |
| Delay Adj:   |      | 1.00 |      |      | 1.00 |      |      | 1.00 |      |      | 1.00 |      |
| ApprAdjDel:  |      | 9.5  |      |      | 9.2  |      |      | 10.3 |      |      | 24.9 |      |
| LOS by Appr: |      | A    |      |      | A    |      |      | B    |      |      | C    |      |

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Sutter Medical Center  
 CUMULATIVE TWO-WAY PLUS SUTTER PROGRAM PLUS TRINITY PROJECT  
 AM Peak Hour

Level Of Service Computation Report  
 2000 HCM Unsignalized Method (Base Volume Alternative)

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Intersection #5800 26th St & K St

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Average Delay (sec/veh): 2.9 Worst Case Level Of Service: C[ 20.9]

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| Approach: | North Bound |     |     | South Bound |     |     | East Bound |     |     | West Bound |     |     |
|-----------|-------------|-----|-----|-------------|-----|-----|------------|-----|-----|------------|-----|-----|
| Movement: | L           | - T | - R | L           | - T | - R | L          | - T | - R | L          | - T | - R |

|          |           |   |        |           |   |        |              |   |        |              |   |        |
|----------|-----------|---|--------|-----------|---|--------|--------------|---|--------|--------------|---|--------|
| Control: | Stop Sign |   |        | Stop Sign |   |        | Uncontrolled |   |        | Uncontrolled |   |        |
| Rights:  | Include   |   |        | Include   |   |        | Include      |   |        | Include      |   |        |
| Lanes:   | 0         | 0 | 1! 0 0 | 0         | 0 | 1! 0 0 | 0            | 0 | 1! 0 0 | 0            | 0 | 1! 0 0 |

| Volume Module: |      |      |      |      |      |      |      |      |      |      |      |      |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:      | 17   | 38   | 28   | 3    | 36   | 16   | 13   | 211  | 17   | 14   | 654  | 28   |
| Growth Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse:   | 17   | 38   | 28   | 3    | 36   | 16   | 13   | 211  | 17   | 14   | 654  | 28   |
| User Adj:      | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:    | 17   | 38   | 28   | 3    | 36   | 16   | 13   | 211  | 17   | 14   | 654  | 28   |
| Reduct Vol:    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Final Vol.:    | 17   | 38   | 28   | 3    | 36   | 16   | 13   | 211  | 17   | 14   | 654  | 28   |

| Critical Gap Module: |     |     |     |     |     |     |     |      |        |     |      |        |
|----------------------|-----|-----|-----|-----|-----|-----|-----|------|--------|-----|------|--------|
| Critical Gp:         | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | xxxx | xxxxxx | 4.1 | xxxx | xxxxxx |
| FollowUpTim:         | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | xxxx | xxxxxx | 2.2 | xxxx | xxxxxx |

| Capacity Module: |      |      |      |      |      |      |      |      |        |      |      |        |
|------------------|------|------|------|------|------|------|------|------|--------|------|------|--------|
| Cnflct Vol:      | 968  | 956  | 220  | 974  | 950  | 668  | 682  | xxxx | xxxxxx | 228  | xxxx | xxxxxx |
| Potent Cap.:     | 235  | 260  | 825  | 233  | 262  | 462  | 920  | xxxx | xxxxxx | 1352 | xxxx | xxxxxx |
| Move Cap.:       | 199  | 254  | 825  | 196  | 256  | 462  | 920  | xxxx | xxxxxx | 1352 | xxxx | xxxxxx |
| Volume/Cap:      | 0.09 | 0.15 | 0.03 | 0.02 | 0.14 | 0.03 | 0.01 | xxxx | xxxx   | 0.01 | xxxx | xxxx   |

| Level Of Service Module: |        |       |        |        |       |        |        |       |        |        |       |        |
|--------------------------|--------|-------|--------|--------|-------|--------|--------|-------|--------|--------|-------|--------|
| Queue:                   | xxxxxx | xxxx  | xxxxxx | xxxxxx | xxxx  | xxxxxx | 0.0    | xxxx  | xxxxxx | 0.0    | xxxx  | xxxxxx |
| Stopped Del:             | xxxxxx | xxxx  | xxxxxx | xxxxxx | xxxx  | xxxxxx | 9.0    | xxxx  | xxxxxx | 7.7    | xxxx  | xxxxxx |
| LOS by Move:             | *      | *     | *      | *      | *     | *      | A      | *     | *      | A      | *     | *      |
| Movement:                | LT     | - LTR | - RT   | LT     | - LTR | - RT   | LT     | - LTR | - RT   | LT     | - LTR | - RT   |
| Shared Cap.:             | xxxx   | 309   | xxxxxx | xxxx   | 288   | xxxxxx | xxxx   | xxxx  | xxxxxx | xxxx   | xxxx  | xxxxxx |
| SharedQueue:             | xxxxxx | 1.1   | xxxxxx | xxxxxx | 0.7   | xxxxxx | xxxxxx | xxxx  | xxxxxx | xxxxxx | xxxx  | xxxxxx |
| Shrd StpDel:             | xxxxxx | 20.9  | xxxxxx | xxxxxx | 20.4  | xxxxxx | xxxxxx | xxxx  | xxxxxx | xxxxxx | xxxx  | xxxxxx |
| Shared LOS:              | *      | C     | *      | *      | C     | *      | *      | *     | *      | *      | *     | *      |
| ApproachDel:             | 20.9   |       |        | 20.4   |       |        | xxxxxx |       |        | xxxxxx |       |        |
| ApproachLOS:             | C      |       |        | C      |       |        | *      |       |        | *      |       |        |

Sutter Medical Center  
 CUMULATIVE TWO-WAY PLUS SUTTER PROGRAM PLUS TRINITY PROJECT  
 AM Peak Hour

Level Of Service Computation Report  
 2000 HCM Unsignalized Method (Base Volume Alternative)

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 Intersection #6395 27th St & N St  
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Average Delay (sec/veh): 2.3 Worst Case Level Of Service: C[ 20.3]

| Approach: | North Bound |   |        | South Bound |   |        | East Bound   |   |        | West Bound   |   |       |
|-----------|-------------|---|--------|-------------|---|--------|--------------|---|--------|--------------|---|-------|
| Movement: | L           | T | R      | L           | T | R      | L            | T | R      | L            | T | R     |
| Control:  | Stop Sign   |   |        | Stop Sign   |   |        | Uncontrolled |   |        | Uncontrolled |   |       |
| Rights:   | Include     |   |        | Include     |   |        | Include      |   |        | Include      |   |       |
| Lanes:    | 0           | 0 | 1! 0 0 | 0           | 0 | 1! 0 0 | 0            | 0 | 1! 0 0 | 0            | 0 | 0 1 0 |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 5    | 12   | 13   | 32   | 6    | 9    | 69   | 4    | 5    | 0    | 656  | 64   |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 5    | 12   | 13   | 32   | 6    | 9    | 69   | 4    | 5    | 0    | 656  | 64   |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 5    | 12   | 13   | 32   | 6    | 9    | 69   | 4    | 5    | 0    | 656  | 64   |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Final Vol.:  | 5    | 12   | 13   | 32   | 6    | 9    | 69   | 4    | 5    | 0    | 656  | 64   |

Critical Gap Module:

|              |     |     |     |     |     |     |     |      |        |        |      |        |
|--------------|-----|-----|-----|-----|-----|-----|-----|------|--------|--------|------|--------|
| Critical Gp: | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx |
| FollowUpTim: | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx |

Capacity Module:

|              |      |      |      |      |      |      |      |      |        |      |      |        |
|--------------|------|------|------|------|------|------|------|------|--------|------|------|--------|
| Cnflict Vol: | 840  | 865  | 7    | 845  | 835  | 688  | 720  | xxxx | xxxxxx | xxxx | xxxx | xxxxxx |
| Potent Cap.: | 287  | 294  | 1082 | 285  | 306  | 450  | 891  | xxxx | xxxxxx | xxxx | xxxx | xxxxxx |
| Move Cap.:   | 260  | 270  | 1082 | 255  | 281  | 450  | 891  | xxxx | xxxxxx | xxxx | xxxx | xxxxxx |
| Volume/Cap:  | 0.02 | 0.04 | 0.01 | 0.13 | 0.02 | 0.02 | 0.08 | xxxx | xxxx   | xxxx | xxxx | xxxx   |

Level Of Service Module:

|              |               |               |               |               |               |               |               |               |               |               |               |               |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Queue:       | xxxxx         | xxxx          | xxxxx         | xxxxx         | xxxx          | xxxxx         | 0.3           | xxxx          | xxxxxx        | xxxxxx        | xxxx          | xxxxxx        |
| Stopped Del: | xxxxxx        | xxxx          | xxxxxx        | xxxxxx        | xxxx          | xxxxxx        | 9.4           | xxxx          | xxxxxx        | xxxxxx        | xxxx          | xxxxxx        |
| LOS by Move: | *             | *             | *             | *             | *             | *             | A             | *             | *             | *             | *             | *             |
| Movement:    | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT |
| Shared Cap.: | xxxx          | 397           | xxxxxx        | xxxx          | 282           | xxxxxx        | xxxx          | xxxx          | xxxxxx        | xxxx          | xxxx          | xxxxxx        |
| SharedQueue: | xxxxxx        | 0.2           | xxxxxx        | xxxxxx        | 0.6           | xxxxxx        | xxxxxx        | xxxx          | xxxxxx        | xxxxxx        | xxxx          | xxxxxx        |
| Shrd StpDel: | xxxxxx        | 14.8          | xxxxxx        | xxxxxx        | 20.3          | xxxxxx        | xxxxxx        | xxxx          | xxxxxx        | xxxxxx        | xxxx          | xxxxxx        |
| Shared LOS:  | *             | B             | *             | *             | C             | *             | *             | *             | *             | *             | *             | *             |
| ApproachDel: |               | 14.8          |               |               | 20.3          |               | xxxxxxx       |               |               | xxxxxxx       |               |               |
| ApproachLOS: |               | B             |               |               | C             |               | *             |               |               | *             |               | *             |



Sutter Medical Center  
 CUMULATIVE TWO-WAY PLUS SUTTER PROGRAM PLUS TRINITY PROJECT  
 AM Peak Hour

Level Of Service Computation Report  
 2000 HCM Unsignalized Method (Base Volume Alternative)

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 Intersection #6396 Capitol Ave & 27th St  
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Average Delay (sec/veh): 3.0 Worst Case Level Of Service: D[ 26.0]  
 \*\*\*\*\*

| Approach:      | North Bound |      |      | South Bound |      |      | East Bound   |      |      | West Bound   |      |      |
|----------------|-------------|------|------|-------------|------|------|--------------|------|------|--------------|------|------|
| Movement:      | L           | T    | R    | L           | T    | R    | L            | T    | R    | L            | T    | R    |
| Control:       | Stop Sign   |      |      | Stop Sign   |      |      | Uncontrolled |      |      | Uncontrolled |      |      |
| Rights:        | Include     |      |      | Include     |      |      | Include      |      |      | Include      |      |      |
| Lanes:         | 0           | 0    | 1!0  | 0           | 0    | 1!0  | 0            | 0    | 1!0  | 0            | 0    | 1!0  |
| Volume Module: |             |      |      |             |      |      |              |      |      |              |      |      |
| Base Vol:      | 26          | 19   | 35   | 31          | 18   | 11   | 1            | 362  | 22   | 16           | 583  | 16   |
| Growth Adj:    | 1.00        | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Initial Bse:   | 26          | 19   | 35   | 31          | 18   | 11   | 1            | 362  | 22   | 16           | 583  | 16   |
| User Adj:      | 1.00        | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| PHF Adj:       | 1.00        | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| PHF Volume:    | 26          | 19   | 35   | 31          | 18   | 11   | 1            | 362  | 22   | 16           | 583  | 16   |
| Reduct Vol:    | 0           | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Final Vol.:    | 26          | 19   | 35   | 31          | 18   | 11   | 1            | 362  | 22   | 16           | 583  | 16   |

| Critical Gap Module: |     |     |     |     |     |     |     |      |       |     |      |       |
|----------------------|-----|-----|-----|-----|-----|-----|-----|------|-------|-----|------|-------|
| Critical Gp:         | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | xxxx | xxxxx | 4.1 | xxxx | xxxxx |
| FollowUpTim:         | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | xxxx | xxxxx | 2.2 | xxxx | xxxxx |

| Capacity Module: |      |      |      |      |      |      |      |      |       |      |      |       |
|------------------|------|------|------|------|------|------|------|------|-------|------|------|-------|
| Cnflct Vol:      | 1013 | 1006 | 373  | 1025 | 1009 | 591  | 599  | xxxx | xxxxx | 384  | xxxx | xxxxx |
| Potent Cap.:     | 219  | 243  | 678  | 215  | 242  | 511  | 988  | xxxx | xxxxx | 1186 | xxxx | xxxxx |
| Move Cap.:       | 200  | 240  | 678  | 190  | 239  | 511  | 988  | xxxx | xxxxx | 1186 | xxxx | xxxxx |
| Volume/Cap:      | 0.13 | 0.08 | 0.05 | 0.16 | 0.08 | 0.02 | 0.00 | xxxx | xxxx  | 0.01 | xxxx | xxxx  |

| Level Of Service Module: |       |      |       |       |      |       |         |      |       |         |      |       |
|--------------------------|-------|------|-------|-------|------|-------|---------|------|-------|---------|------|-------|
| Queue:                   | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | 0.0     | xxxx | xxxxx | 0.0     | xxxx | xxxxx |
| Stopped Del:             | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | 8.6     | xxxx | xxxxx | 8.1     | xxxx | xxxxx |
| LOS by Move:             | *     | *    | *     | *     | *    | *     | A       | *    | *     | A       | *    | *     |
| Movement:                | LT    | LTR  | RT    | LT    | LTR  | RT    | LT      | LTR  | RT    | LT      | LTR  | RT    |
| Shared Cap.:             | xxxx  | 307  | xxxxx | xxxx  | 230  | xxxxx | xxxx    | xxxx | xxxxx | xxxx    | xxxx | xxxxx |
| SharedQueue:             | xxxxx | 1.0  | xxxxx | xxxxx | 1.0  | xxxxx | xxxxx   | xxxx | xxxxx | xxxxx   | xxxx | xxxxx |
| Shrd StpDel:             | xxxxx | 20.8 | xxxxx | xxxxx | 26.0 | xxxxx | xxxxx   | xxxx | xxxxx | xxxxx   | xxxx | xxxxx |
| Shared LOS:              | *     | C    | *     | *     | D    | *     | *       | *    | *     | *       | *    | *     |
| ApproachDel:             |       | 20.8 |       |       | 26.0 |       | xxxxxxx |      |       | xxxxxxx |      |       |
| ApproachLOS:             |       | C    |       |       | D    |       |         | *    |       |         | *    |       |

Sutter Medical Center  
 CUMULATIVE TWO-WAY PLUS SUTTER PROGRAM PLUS TRINITY PROJECT  
 AM Peak Hour

Level Of Service Computation Report  
 2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*  
 Intersection #6397 27th St & L St  
 \*\*\*\*\*

Average Delay (sec/veh): 1.3 Worst Case Level Of Service: C[ 17.1]  
 \*\*\*\*\*

| Approach: | North Bound |   |   | South Bound |   |   | East Bound   |   |   | West Bound   |   |   |
|-----------|-------------|---|---|-------------|---|---|--------------|---|---|--------------|---|---|
| Movement: | L           | T | R | L           | T | R | L            | T | R | L            | T | R |
| Control:  | Stop Sign   |   |   | Stop Sign   |   |   | Uncontrolled |   |   | Uncontrolled |   |   |
| Rights:   | Include     |   |   | Include     |   |   | Include      |   |   | Include      |   |   |
| Lanes:    | 1           | 0 | 0 | 0           | 0 | 1 | 0            | 0 | 0 | 1            | 0 | 0 |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 40   | 0    | 0    | 0    | 0    | 0    | 0    | 386  | 15   | 47   | 333  | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 40   | 0    | 0    | 0    | 0    | 0    | 0    | 386  | 15   | 47   | 333  | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 40   | 0    | 0    | 0    | 0    | 0    | 0    | 386  | 15   | 47   | 333  | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Final Vol.:  | 40   | 0    | 0    | 0    | 0    | 0    | 0    | 386  | 15   | 47   | 333  | 0    |

Critical Gap Module:

|              |     |      |        |        |      |        |        |      |        |     |      |        |
|--------------|-----|------|--------|--------|------|--------|--------|------|--------|-----|------|--------|
| Critical Gp: | 6.4 | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx | 4.1 | xxxx | xxxxxx |
| FollowUpTim: | 3.5 | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx | 2.2 | xxxx | xxxxxx |

Capacity Module:

|              |      |      |        |        |      |        |        |      |        |      |      |        |
|--------------|------|------|--------|--------|------|--------|--------|------|--------|------|------|--------|
| Cnflct Vol:  | 821  | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx | 401  | xxxx | xxxxxx |
| Potent Cap.: | 347  | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx | 1169 | xxxx | xxxxxx |
| Move Cap.:   | 336  | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx | 1169 | xxxx | xxxxxx |
| Volume/Cap:  | 0.12 | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx | 0.04 | xxxx | xxxxxx |

Level Of Service Module:

|              |               |               |               |               |               |               |               |               |               |               |               |        |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------|
| Queue:       | 0.4           | xxxx          | xxxxxx        | xxxxxx        | xxxx          | xxxxxx        | xxxxxx        | xxxx          | xxxxxx        | 0.1           | xxxx          | xxxxxx |
| Stopped Del: | 17.1          | xxxx          | xxxxxx        | xxxxxx        | xxxx          | xxxxxx        | xxxxxx        | xxxx          | xxxxxx        | 8.2           | xxxx          | xxxxxx |
| LOS by Move: | C             | *             | *             | *             | *             | *             | *             | *             | *             | A             | *             | *      |
| Movement:    | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT |        |
| Shared Cap.: | xxxx          | xxxx          | xxxxxx        | xxxx          | 0             | xxxxxx        | xxxx          | xxxx          | xxxxxx        | xxxx          | xxxx          | xxxxxx |
| SharedQueue: | xxxxxx        | xxxx          | xxxxxx        | xxxxxx        | xxxx          | xxxxxx        | xxxxxx        | xxxx          | xxxxxx        | 0.1           | xxxx          | xxxxxx |
| Shrd StpDel: | xxxxxx        | xxxx          | xxxxxx        | xxxxxx        | xxxx          | xxxxxx        | xxxxxx        | xxxx          | xxxxxx        | 8.2           | xxxx          | xxxxxx |
| Shared LOS:  | *             | *             | *             | *             | *             | *             | *             | *             | *             | A             | *             | *      |
| ApproachDel: | 17.1          |               |               | xxxxxxx       |               |               | xxxxxxx       |               |               | xxxxxxx       |               |        |
| ApproachLOS: | C             |               |               | *             |               |               | *             |               |               | *             |               |        |

CUMULATIVE PLUS SUTTER PROGRAM PLUS TRINITY PROJECT  
WITH CENTRAL CITY TWO WAY CONVERSION

PM Peak Hour

Unsignalized Intersections

(pm12)



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Sutter Medical Center  
CUMULATIVE TWO-WAY PLUS SUTTER PROGRAM PLUS TRINITY PROJECT  
PM Peak Hour

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## Scenario Report

Scenario: pm12FU2spttp  
Command: pm12FU2spttp  
Volume: pm12FU2spttp  
Geometry: pm12FU2spttp  
Impact Fee: Default Impact Fee  
Trip Generation: Default Trip Generation  
Trip Distribution: Default Trip Distribution  
Paths: Default Paths  
Routes: Default Routes  
Configuration: Default Configuration

Sutter Medical Center  
 CUMULATIVE TWO-WAY PLUS SUTTER PROGRAM PLUS TRINITY PROJECT  
 PM Peak Hour

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Base Volume Alternative)

\*\*\*\*\*  
 Intersection #3434 26th St & N St  
 \*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap. (X): 0.799  
 Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 18.5  
 Optimal Cycle: 0 Level Of Service: C  
 \*\*\*\*\*

| Approach:   | North Bound |   |      | South Bound |   |      | East Bound |   |      | West Bound |   |       |
|-------------|-------------|---|------|-------------|---|------|------------|---|------|------------|---|-------|
| Movement:   | L           | T | R    | L           | T | R    | L          | T | R    | L          | T | R     |
| Control:    | Stop Sign   |   |      | Stop Sign   |   |      | Stop Sign  |   |      | Stop Sign  |   |       |
| Rights:     | Include     |   |      | Include     |   |      | Include    |   |      | Include    |   |       |
| Min. Green: | 0           | 0 | 0    | 0           | 0 | 0    | 0          | 0 | 0    | 0          | 0 | 0     |
| Lanes:      | 0           | 0 | 1! 0 | 0           | 0 | 1! 0 | 0          | 0 | 1! 0 | 0          | 0 | 1 0 0 |

| Volume Module: | North Bound |      |      | South Bound |      |      | East Bound |      |      | West Bound |      |      |
|----------------|-------------|------|------|-------------|------|------|------------|------|------|------------|------|------|
| Base Vol:      | 3           | 50   | 17   | 9           | 36   | 20   | 35         | 353  | 18   | 0          | 593  | 0    |
| Growth Adj:    | 1.00        | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Initial Bse:   | 3           | 50   | 17   | 9           | 36   | 20   | 35         | 353  | 18   | 0          | 593  | 0    |
| User Adj:      | 1.00        | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| PHF Adj:       | 1.00        | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| PHF Volume:    | 3           | 50   | 17   | 9           | 36   | 20   | 35         | 353  | 18   | 0          | 593  | 0    |
| Reduct Vol:    | 0           | 0    | 0    | 0           | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Reduced Vol:   | 3           | 50   | 17   | 9           | 36   | 20   | 35         | 353  | 18   | 0          | 593  | 0    |
| PCE Adj:       | 1.00        | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| MLF Adj:       | 1.00        | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Final Vol.:    | 3           | 50   | 17   | 9           | 36   | 20   | 35         | 353  | 18   | 0          | 593  | 0    |

| Saturation Flow Module: | North Bound |      |      | South Bound |      |      | East Bound |      |      | West Bound |      |      |
|-------------------------|-------------|------|------|-------------|------|------|------------|------|------|------------|------|------|
| Adjustment:             | 1.00        | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Lanes:                  | 0.04        | 0.72 | 0.24 | 0.14        | 0.55 | 0.31 | 0.09       | 0.87 | 0.04 | 0.00       | 1.00 | 0.00 |
| Final Sat.:             | 23          | 377  | 128  | 73          | 292  | 162  | 61         | 612  | 31   | 0          | 742  | 0    |

| Capacity Analysis Module: | North Bound |      |      | South Bound |      |      | East Bound |      |      | West Bound |      |      |
|---------------------------|-------------|------|------|-------------|------|------|------------|------|------|------------|------|------|
| Vol/Sat:                  | 0.13        | 0.13 | 0.13 | 0.12        | 0.12 | 0.12 | 0.58       | 0.58 | 0.58 | xxxx       | 0.80 | xxxx |
| Crit Moves:               | ****        |      |      | ****        |      |      | ****       |      |      | ****       |      |      |
| Delay/Veh:                | 9.9         | 9.9  | 9.9  | 9.9         | 9.9  | 9.9  | 14.2       | 14.2 | 14.2 | 0.0        | 23.4 | 0.0  |
| Delay Adj:                | 1.00        | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| AdjDel/Veh:               | 9.9         | 9.9  | 9.9  | 9.9         | 9.9  | 9.9  | 14.2       | 14.2 | 14.2 | 0.0        | 23.4 | 0.0  |
| LOS by Move:              | A           | A    | A    | A           | A    | A    | B          | B    | B    | *          | C    | *    |
| ApproachDel:              | 9.9         |      |      | 9.9         |      |      | 14.2       |      |      | 23.4       |      |      |
| Delay Adj:                | 1.00        |      |      | 1.00        |      |      | 1.00       |      |      | 1.00       |      |      |
| ApprAdjDel:               | 9.9         |      |      | 9.9         |      |      | 14.2       |      |      | 23.4       |      |      |
| LOS by Appr:              | A           |      |      | A           |      |      | B          |      |      | C          |      |      |

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Sutter Medical Center  
 CUMULATIVE TWO-WAY PLUS SUTTER PROGRAM PLUS TRINITY PROJECT  
 PM Peak Hour

Level Of Service Computation Report  
 2000 HCM Unsignalized Method (Base Volume Alternative)

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Intersection #5800 26th St & K St

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Average Delay (sec/veh): 5.8 Worst Case Level Of Service: E[ 43.0]

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| Approach: | North Bound |   |        | South Bound |   |        | East Bound   |   |        | West Bound   |   |        |
|-----------|-------------|---|--------|-------------|---|--------|--------------|---|--------|--------------|---|--------|
| Movement: | L           | T | R      | L           | T | R      | L            | T | R      | L            | T | R      |
| Control:  | Stop Sign   |   |        | Stop Sign   |   |        | Uncontrolled |   |        | Uncontrolled |   |        |
| Rights:   | Include     |   |        | Include     |   |        | Include      |   |        | Include      |   |        |
| Lanes:    | 0           | 0 | 1! 0 0 | 0           | 0 | 1! 0 0 | 0            | 0 | 1! 0 0 | 0            | 0 | 1! 0 0 |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 7    | 61   | 21   | 14   | 48   | 35   | 15   | 481  | 17   | 25   | 666  | 31   |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 7    | 61   | 21   | 14   | 48   | 35   | 15   | 481  | 17   | 25   | 666  | 31   |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 7    | 61   | 21   | 14   | 48   | 35   | 15   | 481  | 17   | 25   | 666  | 31   |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Final Vol.:  | 7    | 61   | 21   | 14   | 48   | 35   | 15   | 481  | 17   | 25   | 666  | 31   |

Critical Gap Module:

|              |     |     |     |     |     |     |     |      |        |     |      |        |
|--------------|-----|-----|-----|-----|-----|-----|-----|------|--------|-----|------|--------|
| Critical Gp: | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | xxxx | xxxxxx | 4.1 | xxxx | xxxxxx |
| FollowUpTim: | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | xxxx | xxxxxx | 2.2 | xxxx | xxxxxx |

Capacity Module:

|              |      |      |      |      |      |      |      |      |        |      |      |        |
|--------------|------|------|------|------|------|------|------|------|--------|------|------|--------|
| Cnflct Vol:  | 1293 | 1267 | 489  | 1292 | 1260 | 682  | 697  | xxxx | xxxxxx | 498  | xxxx | xxxxxx |
| Potent Cap.: | 141  | 170  | 583  | 141  | 172  | 454  | 909  | xxxx | xxxxxx | 1076 | xxxx | xxxxxx |
| Move Cap.:   | 98   | 164  | 583  | 94   | 165  | 454  | 909  | xxxx | xxxxxx | 1076 | xxxx | xxxxxx |
| Volume/Cap:  | 0.07 | 0.37 | 0.04 | 0.15 | 0.29 | 0.08 | 0.02 | xxxx | xxxx   | 0.02 | xxxx | xxxx   |

Level Of Service Module:

|              |               |               |               |               |               |               |               |               |               |               |               |               |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Queue:       | xxxxx         | xxxx          | xxxxx         | xxxxx         | xxxx          | xxxxx         | 0.1           | xxxx          | xxxxxx        | 0.1           | xxxx          | xxxxxx        |
| Stopped Del: | xxxxx         | xxxx          | xxxxx         | xxxxx         | xxxx          | xxxxx         | 9.0           | xxxx          | xxxxxx        | 8.4           | xxxx          | xxxxxx        |
| LOS by Move: | *             | *             | *             | *             | *             | *             | A             | *             | *             | A             | *             | *             |
| Movement:    | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT |
| Shared Cap.: | xxxxx         | 185           | xxxxx         | xxxxx         | 188           | xxxxx         | xxxxx         | xxxxx         | xxxxxx        | xxxxx         | xxxxx         | xxxxxx        |
| SharedQueue: | xxxxxx        | 2.3           | xxxxxx        | xxxxxx        | 2.6           | xxxxxx        | xxxxxx        | xxxxx         | xxxxxx        | xxxxxx        | xxxxx         | xxxxxx        |
| Shrd StpDel: | xxxxxx        | 41.2          | xxxxxx        | xxxxxx        | 43.0          | xxxxxx        | xxxxxx        | xxxxx         | xxxxxx        | xxxxxx        | xxxxx         | xxxxxx        |
| Shared LOS:  | *             | E             | *             | *             | E             | *             | *             | *             | *             | *             | *             | *             |
| ApproachDel: |               | 41.2          |               |               | 43.0          |               | xxxxxxx       |               | xxxxxxx       |               | xxxxxxx       |               |
| ApproachLOS: |               | E             |               |               | E             |               | *             |               | *             |               | *             |               |

Sutter Medical Center  
 CUMULATIVE TWO-WAY PLUS SUTTER PROGRAM PLUS TRINITY PROJECT  
 PM Peak Hour

Level Of Service Computation Report  
 2000 HCM Unsignalized Method (Base Volume Alternative)

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Intersection #6395 27th St & N St

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Average Delay (sec/veh): 8.1 Worst Case Level Of Service: F[ 99.9]

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| Approach: | North Bound |   |        | South Bound |   |        | East Bound   |   |        | West Bound   |   |        |
|-----------|-------------|---|--------|-------------|---|--------|--------------|---|--------|--------------|---|--------|
| Movement: | L           | T | R      | L           | T | R      | L            | T | R      | L            | T | R      |
| Control:  | Stop Sign   |   |        | Stop Sign   |   |        | Uncontrolled |   |        | Uncontrolled |   |        |
| Rights:   | Include     |   |        | Include     |   |        | Include      |   |        | Include      |   |        |
| Lanes:    | 0           | 0 | 1! 0 0 | 0           | 0 | 1! 0 0 | 0            | 0 | 1! 0 0 | 0            | 0 | 1! 0 0 |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 4    | 18   | 14   | 61   | 19   | 29   | 28   | 640  | 5    | 4    | 683  | 17   |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 4    | 18   | 14   | 61   | 19   | 29   | 28   | 640  | 5    | 4    | 683  | 17   |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 4    | 18   | 14   | 61   | 19   | 29   | 28   | 640  | 5    | 4    | 683  | 17   |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Final Vol.:  | 4    | 18   | 14   | 61   | 19   | 29   | 28   | 640  | 5    | 4    | 683  | 17   |

Critical Gap Module:

|              |     |     |     |     |     |     |     |      |        |     |      |        |
|--------------|-----|-----|-----|-----|-----|-----|-----|------|--------|-----|------|--------|
| Critical Gp: | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | xxxx | xxxxxx | 4.1 | xxxx | xxxxxx |
| FollowUpTim: | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | xxxx | xxxxxx | 2.2 | xxxx | xxxxxx |

Capacity Module:

|              |      |      |      |      |      |      |      |      |        |      |      |        |
|--------------|------|------|------|------|------|------|------|------|--------|------|------|--------|
| Cnflct Vol:  | 1422 | 1407 | 643  | 1414 | 1401 | 692  | 700  | xxxx | xxxxxx | 645  | xxxx | xxxxxx |
| Potent Cap.: | 115  | 140  | 477  | 116  | 142  | 448  | 906  | xxxx | xxxxxx | 950  | xxxx | xxxxxx |
| Move Cap.:   | 93   | 135  | 477  | 99   | 137  | 448  | 906  | xxxx | xxxxxx | 950  | xxxx | xxxxxx |
| Volume/Cap:  | 0.04 | 0.13 | 0.03 | 0.62 | 0.14 | 0.06 | 0.03 | xxxx | xxxx   | 0.00 | xxxx | xxxx   |

Level Of Service Module:

|              |          |      |        |          |      |        |          |      |        |          |      |        |
|--------------|----------|------|--------|----------|------|--------|----------|------|--------|----------|------|--------|
| Queue:       | xxxxx    | xxxx | xxxxx  | xxxxx    | xxxx | xxxxx  | 0.1      | xxxx | xxxxxx | 0.0      | xxxx | xxxxxx |
| Stopped Del: | xxxxxx   | xxxx | xxxxxx | xxxxxx   | xxxx | xxxxxx | 9.1      | xxxx | xxxxxx | 8.8      | xxxx | xxxxxx |
| LOS by Move: | *        | *    | *      | *        | *    | *      | A        | *    | *      | A        | *    | *      |
| Movement:    | LT - LTR | - RT |        | LT - LTR | - RT |        | LT - LTR | - RT |        | LT - LTR | - RT |        |
| Shared Cap.: | xxxx     | 176  | xxxxxx | xxxx     | 133  | xxxxxx | xxxx     | xxxx | xxxxxx | xxxx     | xxxx | xxxxxx |
| SharedQueue: | xxxxxx   | 0.7  | xxxxxx | xxxxxx   | 5.1  | xxxxxx | xxxxxx   | xxxx | xxxxxx | xxxxxx   | xxxx | xxxxxx |
| Shrd StpDel: | xxxxxx   | 30.7 | xxxxxx | xxxxxx   | 99.9 | xxxxxx | xxxxxx   | xxxx | xxxxxx | xxxxxx   | xxxx | xxxxxx |
| Shared LOS:  | *        | D    | *      | *        | F    | *      | *        | *    | *      | *        | *    | *      |
| ApproachDel: |          | 30.7 |        |          | 99.9 |        | xxxxxxx  |      |        | xxxxxxx  |      |        |
| ApproachLOS: |          | D    |        |          | F    |        |          | *    |        |          | *    |        |



Sutter Medical Center  
 CUMULATIVE TWO-WAY PLUS SUTTER PROGRAM PLUS TRINITY PROJECT  
 PM Peak Hour

Level Of Service Computation Report  
 2000 HCM Unsignalized Method (Base Volume Alternative)

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Intersection #6396 Capitol Ave & 27th St

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Average Delay (sec/veh): 3.3 Worst Case Level Of Service: C[ 15.5]

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| Approach: | North Bound |   |        | South Bound |   |        | East Bound   |   |       | West Bound   |   |       |
|-----------|-------------|---|--------|-------------|---|--------|--------------|---|-------|--------------|---|-------|
| Movement: | L           | T | R      | L           | T | R      | L            | T | R     | L            | T | R     |
| Control:  | Stop Sign   |   |        | Stop Sign   |   |        | Uncontrolled |   |       | Uncontrolled |   |       |
| Rights:   | Include     |   |        | Include     |   |        | Include      |   |       | Include      |   |       |
| Lanes:    | 0           | 0 | 1! 0 0 | 0           | 0 | 1! 0 0 | 0            | 0 | 0 1 0 | 0            | 1 | 0 0 0 |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 66   | 16   | 21   | 11   | 19   | 11   | 0    | 390  | 19   | 21   | 118  | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 66   | 16   | 21   | 11   | 19   | 11   | 0    | 390  | 19   | 21   | 118  | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 66   | 16   | 21   | 11   | 19   | 11   | 0    | 390  | 19   | 21   | 118  | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Final Vol.:  | 66   | 16   | 21   | 11   | 19   | 11   | 0    | 390  | 19   | 21   | 118  | 0    |

Critical Gap Module:

|              |     |     |     |     |     |     |        |       |        |     |       |        |
|--------------|-----|-----|-----|-----|-----|-----|--------|-------|--------|-----|-------|--------|
| Critical Gp: | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | xxxxx  | xxxxx | xxxxx  | 4.1 | xxxxx | xxxxx  |
| FollowUpTim: | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | xxxxxx | xxxxx | xxxxxx | 2.2 | xxxxx | xxxxxx |

Capacity Module:

|              |      |      |      |      |      |      |       |       |        |      |       |        |
|--------------|------|------|------|------|------|------|-------|-------|--------|------|-------|--------|
| Cnflct Vol:  | 575  | 560  | 400  | 578  | 569  | 118  | xxxxx | xxxxx | xxxxxx | 409  | xxxxx | xxxxxx |
| Potent Cap.: | 432  | 440  | 655  | 430  | 435  | 939  | xxxxx | xxxxx | xxxxxx | 1161 | xxxxx | xxxxxx |
| Move Cap.:   | 407  | 432  | 655  | 399  | 427  | 939  | xxxxx | xxxxx | xxxxxx | 1161 | xxxxx | xxxxxx |
| Volume/Cap:  | 0.16 | 0.04 | 0.03 | 0.03 | 0.04 | 0.01 | xxxxx | xxxxx | xxxxxx | 0.02 | xxxxx | xxxxxx |

Level Of Service Module:

|              |               |               |               |               |               |               |               |               |               |               |               |        |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------|
| Queue:       | xxxxxx        | xxxxx         | xxxxxx        | xxxxxx        | xxxxx         | xxxxxx        | xxxxxx        | xxxxx         | xxxxxx        | 0.1           | xxxxx         | xxxxxx |
| Stopped Del: | xxxxxx        | xxxxx         | xxxxxx        | xxxxxx        | xxxxx         | xxxxxx        | xxxxxx        | xxxxx         | xxxxxx        | 8.2           | xxxxx         | xxxxxx |
| LOS by Move: | *             | *             | *             | *             | *             | *             | *             | *             | *             | A             | *             | *      |
| Movement:    | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT |        |
| Shared Cap.: | xxxxx         | 445           | xxxxxx        | xxxxx         | 489           | xxxxxx        | xxxxx         | xxxxx         | xxxxxx        | xxxxx         | xxxxx         | xxxxxx |
| SharedQueue: | xxxxxx        | 0.9           | xxxxxx        | xxxxxx        | 0.3           | xxxxxx        | xxxxxx        | xxxxx         | xxxxxx        | 0.1           | xxxxx         | xxxxxx |
| Shrd StpDel: | xxxxxx        | 15.5          | xxxxxx        | xxxxxx        | 13.0          | xxxxxx        | xxxxxx        | xxxxx         | xxxxxx        | 8.2           | xxxxx         | xxxxxx |
| Shared LOS:  | *             | C             | *             | *             | B             | *             | *             | *             | *             | A             | *             | *      |
| ApproachDel: |               | 15.5          |               |               | 13.0          |               | xxxxxxx       |               |               | xxxxxxx       |               |        |
| ApproachLOS: |               | C             |               |               | B             |               |               | *             |               |               | *             |        |

Sutter Medical Center  
 CUMULATIVE TWO-WAY PLUS SUTTER PROGRAM PLUS TRINITY PROJECT  
 PM Peak Hour

Level Of Service Computation Report  
 2000 HCM Unsignalized Method (Base Volume Alternative)

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 Intersection #6397 27th St & L St  
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Average Delay (sec/veh): 1.2 Worst Case Level Of Service: B[ 14.5]

| Approach: | North Bound |   |        | South Bound |   |        | East Bound   |   |       | West Bound   |   |       |
|-----------|-------------|---|--------|-------------|---|--------|--------------|---|-------|--------------|---|-------|
| Movement: | L           | T | R      | L           | T | R      | L            | T | R     | L            | T | R     |
| Control:  | Stop Sign   |   |        | Stop Sign   |   |        | Uncontrolled |   |       | Uncontrolled |   |       |
| Rights:   | Include     |   |        | Include     |   |        | Include      |   |       | Include      |   |       |
| Lanes:    | 0           | 0 | 1! 0 0 | 0           | 0 | 1! 0 0 | 0            | 0 | 0 1 0 | 0            | 1 | 0 0 0 |

Volume Module:

|              |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Base Vol:    | 31   | 0    | 5    | 0    | 0    | 0    | 0    | 427  | 30   | 37   | 192  | 0    |
| Growth Adj:  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 31   | 0    | 5    | 0    | 0    | 0    | 0    | 427  | 30   | 37   | 192  | 0    |
| User Adj:    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj:     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume:  | 31   | 0    | 5    | 0    | 0    | 0    | 0    | 427  | 30   | 37   | 192  | 0    |
| Reduct Vol:  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Final Vol.:  | 31   | 0    | 5    | 0    | 0    | 0    | 0    | 427  | 30   | 37   | 192  | 0    |

Critical Gap Module:

|              |     |      |     |        |      |        |        |      |        |     |      |        |
|--------------|-----|------|-----|--------|------|--------|--------|------|--------|-----|------|--------|
| Critical Gp: | 6.4 | xxxx | 6.2 | xxxxxx | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx | 4.1 | xxxx | xxxxxx |
| FollowUpTim: | 3.5 | xxxx | 3.3 | xxxxxx | xxxx | xxxxxx | xxxxxx | xxxx | xxxxxx | 2.2 | xxxx | xxxxxx |

Capacity Module:

|              |      |      |      |      |      |        |      |      |        |      |      |        |
|--------------|------|------|------|------|------|--------|------|------|--------|------|------|--------|
| Cnflct Vol:  | 708  | xxxx | 442  | xxxx | xxxx | xxxxxx | xxxx | xxxx | xxxxxx | 457  | xxxx | xxxxxx |
| Potent Cap.: | 404  | xxxx | 620  | xxxx | xxxx | xxxxxx | xxxx | xxxx | xxxxxx | 1114 | xxxx | xxxxxx |
| Move Cap.:   | 394  | xxxx | 620  | xxxx | xxxx | xxxxxx | xxxx | xxxx | xxxxxx | 1114 | xxxx | xxxxxx |
| Volume/Cap:  | 0.08 | xxxx | 0.01 | xxxx | xxxx | xxxx   | xxxx | xxxx | xxxx   | 0.03 | xxxx | xxxx   |

Level Of Service Module:

|              |               |               |               |               |               |               |               |               |               |               |               |        |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------|
| Queue:       | xxxxxx        | xxxx          | xxxxxx        | xxxxxx        | xxxx          | xxxxxx        | xxxxxx        | xxxx          | xxxxxx        | 0.1           | xxxx          | xxxxxx |
| Stopped Del: | xxxxxx        | xxxx          | xxxxxx        | xxxxxx        | xxxx          | xxxxxx        | xxxxxx        | xxxx          | xxxxxx        | 8.3           | xxxx          | xxxxxx |
| LOS by Move: | *             | *             | *             | *             | *             | *             | *             | *             | *             | A             | *             | *      |
| Movement:    | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT | LT - LTR - RT |        |
| Shared Cap.: | xxxx          | 415           | xxxxxx        | xxxx          | 0             | xxxxxx        | xxxx          | xxxx          | xxxxxx        | xxxx          | xxxx          | xxxxxx |
| SharedQueue: | xxxxxx        | 0.3           | xxxxxx        | xxxxxx        | xxxx          | xxxxxx        | xxxxxx        | xxxx          | xxxxxx        | 0.1           | xxxx          | xxxxxx |
| Shrd StpDel: | xxxxxx        | 14.5          | xxxxxx        | xxxxxx        | xxxx          | xxxxxx        | xxxxxx        | xxxx          | xxxxxx        | 8.3           | xxxx          | xxxxxx |
| Shared LOS:  | *             | B             | *             | *             | *             | *             | *             | *             | *             | A             | *             | *      |
| ApproachDel: |               | 14.5          |               | xxxxxx        |               |               | xxxxxx        |               |               | xxxxxx        |               |        |
| ApproachLOS: |               | B             |               | *             |               |               | *             |               |               | *             |               |        |

MITIGATED CUMULATIVE PLUS SUTTER PROJECT  
WITH SMART PLAN

PM Peak Hour

Signalized Intersections

(pm7)



Sutter Medical Center
CUMULATIVE PLUS SUTTER PROJECT
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #6396 Capitol Ave & 27th St

Cycle (sec): 60 Critical Vol./Cap. (X): 0.582
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.9
Optimal Cycle: 30 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Split Phase, Permitted), Rights (Include), Min. Green, and Lanes.

Volume Module table with 12 columns representing different traffic movements and 10 rows of volume-related metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns and 4 rows showing Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 9 rows showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, and HCM2kAvg.

HCM Signalized Intersection Capacity Analysis  
6484: Capitol & 28th Street

7/11/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL   | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|-------|------|------|------|------|-------|------|------|------|------|------|
| Lane Configurations    |      | ↔     |      | ↗    | ↖    |      | ↗     | ↖    |      | ↗    | ↖    |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0   |      | 4.0  | 4.0  |      | 4.0   | 4.0  |      | 4.0  | 4.0  |      |
| Lane Util. Factor      |      | 1.00  |      | 1.00 | 1.00 |      | 1.00  | 1.00 |      | 1.00 | 1.00 |      |
| Frt                    |      | 0.98  |      | 1.00 | 0.99 |      | 1.00  | 0.92 |      | 1.00 | 0.99 |      |
| Flt Protected          |      | 1.00  |      | 0.95 | 1.00 |      | 0.95  | 1.00 |      | 0.95 | 1.00 |      |
| Satd. Flow (prot)      |      | 1642  |      | 1770 | 1656 |      | 1593  | 1540 |      | 1593 | 1668 |      |
| Flt Permitted          |      | 0.98  |      | 0.37 | 1.00 |      | 0.58  | 1.00 |      | 0.35 | 1.00 |      |
| Satd. Flow (perm)      |      | 1607  |      | 680  | 1656 |      | 974   | 1540 |      | 588  | 1668 |      |
| Volume (vph)           | 22   | 523   | 90   | 56   | 522  | 46   | 226   | 185  | 221  | 103  | 225  | 8    |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 22   | 523   | 90   | 56   | 522  | 46   | 226   | 185  | 221  | 103  | 225  | 8    |
| RTOR Reduction (vph)   | 0    | 12    | 0    | 0    | 7    | 0    | 0     | 86   | 0    | 0    | 3    | 0    |
| Lane Group Flow (vph)  | 0    | 623   | 0    | 56   | 562  | 0    | 226   | 320  | 0    | 103  | 230  | 0    |
| Parking (#/hr)         | 0    | 0     | 0    |      | 0    | 0    | 0     | 0    | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |       |      | Perm |      |      | Perm  |      |      | Perm |      |      |
| Protected Phases       |      | 4     |      |      | 8    |      |       | 2    |      |      | 6    |      |
| Permitted Phases       | 4    |       |      | 8    |      |      | 2     |      |      | 6    |      |      |
| Actuated Green, G (s)  |      | 26.0  |      | 26.0 | 26.0 |      | 18.0  | 18.0 |      | 18.0 | 18.0 |      |
| Effective Green, g (s) |      | 25.0  |      | 25.0 | 25.0 |      | 17.0  | 17.0 |      | 17.0 | 17.0 |      |
| Actuated g/C Ratio     |      | 0.50  |      | 0.50 | 0.50 |      | 0.34  | 0.34 |      | 0.34 | 0.34 |      |
| Clearance Time (s)     |      | 3.0   |      | 3.0  | 3.0  |      | 3.0   | 3.0  |      | 3.0  | 3.0  |      |
| Lane Grp Cap (vph)     |      | 804   |      | 340  | 828  |      | 331   | 524  |      | 200  | 567  |      |
| v/s Ratio Prot         |      |       |      |      | 0.34 |      |       | 0.21 |      |      | 0.14 |      |
| v/s Ratio Perm         |      | c0.39 |      | 0.08 |      |      | c0.23 |      |      | 0.18 |      |      |
| v/c Ratio              |      | 0.77  |      | 0.16 | 0.68 |      | 0.68  | 0.61 |      | 0.52 | 0.41 |      |
| Uniform Delay, d1      |      | 10.2  |      | 6.8  | 9.5  |      | 14.2  | 13.7 |      | 13.2 | 12.6 |      |
| Progression Factor     |      | 1.00  |      | 1.00 | 1.00 |      | 1.00  | 1.00 |      | 1.00 | 1.00 |      |
| Incremental Delay, d2  |      | 7.2   |      | 1.0  | 4.4  |      | 10.9  | 5.2  |      | 9.2  | 2.2  |      |
| Delay (s)              |      | 17.4  |      | 7.9  | 13.9 |      | 25.1  | 19.0 |      | 22.4 | 14.8 |      |
| Level of Service       |      | B     |      | A    | B    |      | C     | B    |      | C    | B    |      |
| Approach Delay (s)     |      | 17.4  |      |      | 13.4 |      |       | 21.2 |      |      | 17.1 |      |
| Approach LOS           |      | B     |      |      | B    |      |       | C    |      |      | B    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 17.3  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.74  |                      |     |
| Actuated Cycle Length (s)         | 50.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 90.1% | ICU Level of Service | E   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 2239: L Street & Alhambra

7/11/2005



| Movement                          | EBL  | EBT  | EBR  | WBL    | WBT   | WBR  | NBL                  | NBT  | NBR  | SBL   | SBT  | SBR  |
|-----------------------------------|------|------|------|--------|-------|------|----------------------|------|------|-------|------|------|
| Lane Configurations               |      |      |      |        | ↕     |      | ↖                    | ↗    |      |       | ↖    | ↗    |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900   | 1900  | 1900 | 1900                 | 1900 | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)               |      |      |      |        | 4.0   |      | 4.0                  | 4.0  |      |       | 4.0  | 4.0  |
| Lane Util. Factor                 |      |      |      |        | 1.00  |      | 1.00                 | 1.00 |      |       | 1.00 | 1.00 |
| Frt                               |      |      |      |        | 0.98  |      | 1.00                 | 0.97 |      |       | 1.00 | 0.85 |
| Flt Protected                     |      |      |      |        | 0.99  |      | 0.95                 | 1.00 |      |       | 1.00 | 1.00 |
| Satd. Flow (prot)                 |      |      |      |        | 1623  |      | 1593                 | 1621 |      |       | 1858 | 1425 |
| Flt Permitted                     |      |      |      |        | 0.99  |      | 0.28                 | 1.00 |      |       | 0.95 | 1.00 |
| Satd. Flow (perm)                 |      |      |      |        | 1623  |      | 464                  | 1621 |      |       | 1763 | 1425 |
| Volume (vph)                      | 0    | 0    | 0    | 58     | 211   | 56   | 143                  | 529  | 150  | 42    | 764  | 290  |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00   | 1.00  | 1.00 | 1.00                 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 0    | 0    | 0    | 58     | 211   | 56   | 143                  | 529  | 150  | 42    | 764  | 290  |
| RTOR Reduction (vph)              | 0    | 0    | 0    | 0      | 8     | 0    | 0                    | 11   | 0    | 0     | 0    | 62   |
| Lane Group Flow (vph)             | 0    | 0    | 0    | 0      | 317   | 0    | 143                  | 668  | 0    | 0     | 806  | 228  |
| Parking (#/hr)                    |      |      |      | 0      | 0     | 0    | 0                    | 0    | 0    |       |      | 0    |
| Turn Type                         |      |      |      |        | Perm  |      | Perm                 |      |      | Perm  |      | Perm |
| Protected Phases                  |      |      |      |        |       | 6    |                      | 8    |      |       |      | 4    |
| Permitted Phases                  |      |      |      |        | 6     |      | 8                    |      |      | 4     |      | 4    |
| Actuated Green, G (s)             |      |      |      |        | 17.0  |      | 67.0                 | 67.0 |      |       | 67.0 | 67.0 |
| Effective Green, g (s)            |      |      |      |        | 16.0  |      | 66.0                 | 66.0 |      |       | 66.0 | 66.0 |
| Actuated g/C Ratio                |      |      |      |        | 0.18  |      | 0.73                 | 0.73 |      |       | 0.73 | 0.73 |
| Clearance Time (s)                |      |      |      |        | 3.0   |      | 3.0                  | 3.0  |      |       | 3.0  | 3.0  |
| Lane Grp Cap (vph)                |      |      |      |        | 289   |      | 340                  | 1189 |      |       | 1293 | 1045 |
| v/s Ratio Prot                    |      |      |      |        |       |      |                      | 0.41 |      |       |      |      |
| v/s Ratio Perm                    |      |      |      |        | 0.20  |      | 0.31                 |      |      | c0.46 | 0.16 |      |
| v/c Ratio                         |      |      |      |        | 1.10  |      | 0.42                 | 0.56 |      |       | 0.62 | 0.22 |
| Uniform Delay, d1                 |      |      |      |        | 37.0  |      | 4.6                  | 5.4  |      |       | 5.9  | 3.8  |
| Progression Factor                |      |      |      |        | 1.00  |      | 0.28                 | 0.25 |      |       | 1.21 | 3.68 |
| Incremental Delay, d2             |      |      |      |        | 81.1  |      | 2.1                  | 1.0  |      |       | 1.9  | 0.4  |
| Delay (s)                         |      |      |      |        | 118.1 |      | 3.4                  | 2.4  |      |       | 9.0  | 14.4 |
| Level of Service                  |      |      |      |        | F     |      | A                    | A    |      |       | A    | B    |
| Approach Delay (s)                |      | 0.0  |      |        | 118.1 |      |                      | 2.6  |      |       | 10.5 |      |
| Approach LOS                      |      | A    |      |        | F     |      |                      | A    |      |       | B    |      |
| <b>Intersection Summary</b>       |      |      |      |        |       |      |                      |      |      |       |      |      |
| HCM Average Control Delay         |      |      |      | 23.2   |       |      | HCM Level of Service |      |      |       | C    |      |
| HCM Volume to Capacity ratio      |      |      |      | 0.72   |       |      |                      |      |      |       |      |      |
| Actuated Cycle Length (s)         |      |      |      | 90.0   |       |      | Sum of lost time (s) |      |      |       | 8.0  |      |
| Intersection Capacity Utilization |      |      |      | 107.2% |       |      | ICU Level of Service |      |      |       | G    |      |
| Analysis Period (min)             |      |      |      | 15     |       |      |                      |      |      |       |      |      |
| c Critical Lane Group             |      |      |      |        |       |      |                      |      |      |       |      |      |

HCM Signalized Intersection Capacity Analysis  
 3436: Capitol & Alhambra

7/11/2005



| Movement                          | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL   | SBT  | SBR  |
|-----------------------------------|------|------|------|------|-------|------|------|------|------|-------|------|------|
| Lane Configurations               | ↖    | ↑    | ↗    | ↖    | ↑     | ↗    | ↖    | ↑    | ↗    | ↖     | ↑    | ↗    |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)               | 4.0  | 4.0  | 4.0  | 4.0  | 4.0   | 4.0  | 4.0  | 4.0  | 4.0  | 4.0   | 4.0  | 4.0  |
| Lane Util. Factor                 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Fr <sub>t</sub>                   | 1.00 | 1.00 | 0.85 | 1.00 | 1.00  | 0.85 | 1.00 | 1.00 | 0.85 | 1.00  | 1.00 | 0.85 |
| Flt Protected                     | 0.95 | 1.00 | 1.00 | 0.95 | 1.00  | 1.00 | 0.95 | 1.00 | 1.00 | 0.95  | 1.00 | 1.00 |
| Satd. Flow (prot)                 | 1593 | 1676 | 1425 | 1593 | 1676  | 1425 | 1593 | 1676 | 1425 | 1593  | 1676 | 1425 |
| Flt Permitted                     | 0.17 | 1.00 | 1.00 | 0.37 | 1.00  | 1.00 | 0.36 | 1.00 | 1.00 | 0.30  | 1.00 | 1.00 |
| Satd. Flow (perm)                 | 278  | 1676 | 1425 | 622  | 1676  | 1425 | 611  | 1676 | 1425 | 504   | 1676 | 1425 |
| Volume (vph)                      | 83   | 410  | 30   | 49   | 611   | 198  | 54   | 545  | 81   | 213   | 472  | 83   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 83   | 410  | 30   | 49   | 611   | 198  | 54   | 545  | 81   | 213   | 472  | 83   |
| RTOR Reduction (vph)              | 0    | 0    | 18   | 0    | 0     | 119  | 0    | 0    | 41   | 0     | 0    | 43   |
| Lane Group Flow (vph)             | 83   | 410  | 12   | 49   | 611   | 79   | 54   | 545  | 40   | 213   | 472  | 40   |
| Parking (#/hr)                    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    | 0     | 0    | 0    |
| Turn Type                         | Perm |      | Perm | Perm |       | Perm | Perm |      | Perm | Perm  |      | Perm |
| Protected Phases                  |      | 4    |      |      | 8     |      |      | 2    |      |       | 6    |      |
| Permitted Phases                  | 4    |      | 4    | 8    |       | 8    | 2    |      | 2    | 6     |      | 6    |
| Actuated Green, G (s)             | 27.0 | 27.0 | 27.0 | 27.0 | 27.0  | 27.0 | 32.0 | 32.0 | 32.0 | 32.0  | 32.0 | 32.0 |
| Effective Green, g (s)            | 26.0 | 26.0 | 26.0 | 26.0 | 26.0  | 26.0 | 31.0 | 31.0 | 31.0 | 31.0  | 31.0 | 31.0 |
| Actuated g/C Ratio                | 0.40 | 0.40 | 0.40 | 0.40 | 0.40  | 0.40 | 0.48 | 0.48 | 0.48 | 0.48  | 0.48 | 0.48 |
| Clearance Time (s)                | 3.0  | 3.0  | 3.0  | 3.0  | 3.0   | 3.0  | 3.0  | 3.0  | 3.0  | 3.0   | 3.0  | 3.0  |
| Lane Grp Cap (vph)                | 111  | 670  | 570  | 249  | 670   | 570  | 291  | 799  | 680  | 240   | 799  | 680  |
| v/s Ratio Prot                    |      | 0.24 |      |      | c0.36 |      |      | 0.33 |      |       | 0.28 |      |
| v/s Ratio Perm                    | 0.30 |      | 0.01 | 0.08 |       | 0.06 | 0.09 |      | 0.03 | c0.42 |      | 0.03 |
| v/c Ratio                         | 0.75 | 0.61 | 0.02 | 0.20 | 0.91  | 0.14 | 0.19 | 0.68 | 0.06 | 0.89  | 0.59 | 0.06 |
| Uniform Delay, d <sub>1</sub>     | 16.7 | 15.5 | 11.8 | 12.7 | 18.4  | 12.4 | 9.8  | 13.2 | 9.1  | 15.4  | 12.4 | 9.1  |
| Progression Factor                | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Incremental Delay, d <sub>2</sub> | 36.4 | 4.1  | 0.1  | 1.8  | 18.9  | 0.5  | 1.4  | 4.7  | 0.2  | 35.0  | 3.2  | 0.2  |
| Delay (s)                         | 53.1 | 19.6 | 11.9 | 14.5 | 37.3  | 12.9 | 11.2 | 17.9 | 9.3  | 50.4  | 15.6 | 9.3  |
| Level of Service                  | D    | B    | B    | B    | D     | B    | B    | B    | A    | D     | B    | A    |
| Approach Delay (s)                |      | 24.5 |      |      | 30.3  |      |      | 16.3 |      |       | 24.6 |      |
| Approach LOS                      |      | C    |      |      | C     |      |      | B    |      |       | C    |      |

| Intersection Summary              |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 24.3  | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 0.90  |                      |     |
| Actuated Cycle Length (s)         | 65.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 90.6% | ICU Level of Service | E   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |



MITIGATED CUMULATIVE PLUS SUTTER PROGRAM PLUS  
TRINITY PROJECT WITH SMART PLAN

PM Peak Hour

Signalized Intersections

(pm9)



Sutter Medical Center
CUMULATIVE PLUS SUTTER PROGRAM PLUS TRINITY PROJECT
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #6396 Capitol Ave & 27th St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.610
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 10.7
Optimal Cycle:OPTIMIZED Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement (L-T-R), Control (Split Phase, Permitted), Rights (Include), Min. Green, and Lanes.

Volume Module: Table with 12 columns representing different traffic volumes and adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, and HCM2kAvg.

HCM Signalized Intersection Capacity Analysis  
6484: Capitol & 28th Street

7/11/2005



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL   | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------|------|-------|------|------|------|------|-------|------|------|------|------|------|
| Lane Configurations    |      | ↕     |      | ↗    | ↘    |      | ↗     | ↘    |      | ↗    | ↘    |      |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0   |      | 4.0  | 4.0  |      | 4.0   | 4.0  |      | 4.0  | 4.0  |      |
| Lane Util. Factor      |      | 1.00  |      | 1.00 | 1.00 |      | 1.00  | 1.00 |      | 1.00 | 1.00 |      |
| Fr <sub>t</sub>        |      | 0.98  |      | 1.00 | 0.99 |      | 1.00  | 0.92 |      | 1.00 | 0.99 |      |
| Flt Protected          |      | 1.00  |      | 0.95 | 1.00 |      | 0.95  | 1.00 |      | 0.95 | 1.00 |      |
| Satd. Flow (prot)      |      | 1636  |      | 1770 | 1656 |      | 1593  | 1538 |      | 1593 | 1668 |      |
| Flt Permitted          |      | 0.98  |      | 0.36 | 1.00 |      | 0.58  | 1.00 |      | 0.34 | 1.00 |      |
| Satd. Flow (perm)      |      | 1600  |      | 678  | 1656 |      | 974   | 1538 |      | 571  | 1668 |      |
| Volume (vph)           | 23   | 510   | 105  | 61   | 528  | 47   | 235   | 186  | 228  | 97   | 225  | 8    |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 23   | 510   | 105  | 61   | 528  | 47   | 235   | 186  | 228  | 97   | 225  | 8    |
| RTOR Reduction (vph)   | 0    | 14    | 0    | 0    | 7    | 0    | 0     | 88   | 0    | 0    | 3    | 0    |
| Lane Group Flow (vph)  | 0    | 624   | 0    | 61   | 569  | 0    | 235   | 326  | 0    | 97   | 230  | 0    |
| Parking (#/hr)         | 0    | 0     | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    | 0    |
| Turn Type              | Perm |       |      | Perm |      |      | Perm  |      |      | Perm |      |      |
| Protected Phases       |      | 4     |      |      | 8    |      |       | 2    |      |      | 6    |      |
| Permitted Phases       | 4    |       |      | 8    |      |      | 2     |      |      | 6    |      |      |
| Actuated Green, G (s)  |      | 26.0  |      | 26.0 | 26.0 |      | 18.0  | 18.0 |      | 18.0 | 18.0 |      |
| Effective Green, g (s) |      | 25.0  |      | 25.0 | 25.0 |      | 17.0  | 17.0 |      | 17.0 | 17.0 |      |
| Actuated g/C Ratio     |      | 0.50  |      | 0.50 | 0.50 |      | 0.34  | 0.34 |      | 0.34 | 0.34 |      |
| Clearance Time (s)     |      | 3.0   |      | 3.0  | 3.0  |      | 3.0   | 3.0  |      | 3.0  | 3.0  |      |
| Lane Grp Cap (vph)     |      | 800   |      | 339  | 828  |      | 331   | 523  |      | 194  | 567  |      |
| v/s Ratio Prot         |      |       |      |      | 0.34 |      |       | 0.21 |      |      | 0.14 |      |
| v/s Ratio Perm         |      | c0.39 |      | 0.09 |      |      | c0.24 |      |      | 0.17 |      |      |
| v/c Ratio              |      | 0.78  |      | 0.18 | 0.69 |      | 0.71  | 0.62 |      | 0.50 | 0.41 |      |
| Uniform Delay, d1      |      | 10.2  |      | 6.9  | 9.5  |      | 14.4  | 13.8 |      | 13.1 | 12.6 |      |
| Progression Factor     |      | 1.00  |      | 1.00 | 1.00 |      | 1.00  | 1.00 |      | 1.00 | 1.00 |      |
| Incremental Delay, d2  |      | 7.4   |      | 1.2  | 4.6  |      | 12.2  | 5.5  |      | 8.9  | 2.2  |      |
| Delay (s)              |      | 17.7  |      | 8.0  | 14.1 |      | 26.5  | 19.3 |      | 22.0 | 14.8 |      |
| Level of Service       |      | B     |      | A    | B    |      | C     | B    |      | C    | B    |      |
| Approach Delay (s)     |      | 17.7  |      |      | 13.5 |      |       | 21.9 |      |      | 16.9 |      |
| Approach LOS           |      | B     |      |      | B    |      |       | C    |      |      | B    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 17.6  | HCM Level of Service | B   |
| HCM Volume to Capacity ratio      | 0.75  |                      |     |
| Actuated Cycle Length (s)         | 50.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 91.4% | ICU Level of Service | F   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3435: N Street & 29th Street

7/11/2005



| Movement               | EBT  | EBR  | EBR2 | WBL2  | WBL   | WBT  | SBL2 | SBL  | SBT  | SBR  |
|------------------------|------|------|------|-------|-------|------|------|------|------|------|
| Lane Configurations    | ↑    | ↗    |      |       | ↘     | ↖    | ↗    | ↖    | ↑    | ↘    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900  | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.0  | 4.0  |      |       | 4.0   | 4.0  | 4.0  | 4.0  | 4.0  |      |
| Lane Util. Factor      | 1.00 | 1.00 |      |       | 0.95  | 0.95 | 1.00 | 0.97 | 0.95 |      |
| Frnt                   | 1.00 | 0.85 |      |       | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |      |
| Flt Protected          | 1.00 | 1.00 |      |       | 0.95  | 1.00 | 0.95 | 0.95 | 1.00 |      |
| Satd. Flow (prot)      | 1676 | 1425 |      |       | 1681  | 1770 | 1770 | 3433 | 3362 |      |
| Flt Permitted          | 1.00 | 1.00 |      |       | 0.95  | 1.00 | 0.95 | 0.95 | 1.00 |      |
| Satd. Flow (perm)      | 1676 | 1425 |      |       | 1681  | 1770 | 1770 | 3433 | 3362 |      |
| Volume (vph)           | 517  | 294  | 174  | 150   | 142   | 318  | 165  | 1023 | 793  | 1    |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 517  | 294  | 174  | 150   | 142   | 318  | 165  | 1023 | 793  | 1    |
| RTOR Reduction (vph)   | 0    | 27   | 0    | 0     | 0     | 0    | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 517  | 441  | 0    | 0     | 292   | 318  | 165  | 1023 | 794  | 0    |
| Parking (#/hr)         | 0    | 0    | 0    |       |       |      |      |      | 0    |      |
| Turn Type              |      | Perm |      | Split | Split |      | Perm | Perm |      |      |
| Protected Phases       | 4    |      |      | 8     | 8     | 8    |      |      | 6    |      |
| Permitted Phases       |      | 4    |      |       |       |      | 6    | 6    |      |      |
| Actuated Green, G (s)  | 26.0 | 26.0 |      |       | 16.0  | 16.0 | 29.0 | 29.0 | 29.0 |      |
| Effective Green, g (s) | 25.0 | 25.0 |      |       | 15.0  | 15.0 | 28.0 | 28.0 | 28.0 |      |
| Actuated g/C Ratio     | 0.31 | 0.31 |      |       | 0.19  | 0.19 | 0.35 | 0.35 | 0.35 |      |
| Clearance Time (s)     | 3.0  | 3.0  |      |       | 3.0   | 3.0  | 3.0  | 3.0  | 3.0  |      |
| Lane Grp Cap (vph)     | 524  | 445  |      |       | 315   | 332  | 620  | 1202 | 1177 |      |
| v/s Ratio Prot         | 0.31 |      |      |       | 0.17  | 0.18 |      |      | 0.24 |      |
| v/s Ratio Perm         |      | 0.31 |      |       |       |      | 0.09 | 0.30 |      |      |
| v/c Ratio              | 0.99 | 0.99 |      |       | 0.93  | 0.96 | 0.27 | 0.85 | 0.67 |      |
| Uniform Delay, d1      | 27.3 | 27.4 |      |       | 32.0  | 32.2 | 18.6 | 24.1 | 22.1 |      |
| Progression Factor     | 0.88 | 0.87 |      |       | 1.12  | 1.11 | 0.93 | 0.84 | 0.86 |      |
| Incremental Delay, d2  | 27.0 | 30.6 |      |       | 28.8  | 33.7 | 0.6  | 4.7  | 1.9  |      |
| Delay (s)              | 51.0 | 54.4 |      |       | 64.5  | 69.4 | 18.0 | 25.0 | 20.8 |      |
| Level of Service       | D    | D    |      |       | E     | E    | B    | C    | C    |      |
| Approach Delay (s)     | 52.6 |      |      |       |       | 67.1 |      |      | 22.7 |      |
| Approach LOS           | D    |      |      |       |       | E    |      |      | C    |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 38.5  | HCM Level of Service | D    |
| HCM Volume to Capacity ratio      | 0.93  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 84.9% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
 3436: Capitol & Alhambra

7/11/2005



| Movement               | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL   | SBT  | SBR  |
|------------------------|------|------|------|------|-------|------|------|------|------|-------|------|------|
| Lane Configurations    | ↖    | ↑    | ↗    | ↖    | ↑     | ↗    | ↖    | ↑    | ↗    | ↖     | ↑    | ↗    |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    | 4.0  | 4.0  | 4.0  | 4.0  | 4.0   | 4.0  | 4.0  | 4.0  | 4.0  | 4.0   | 4.0  | 4.0  |
| Lane Util. Factor      | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Fr't                   | 1.00 | 1.00 | 0.85 | 1.00 | 1.00  | 0.85 | 1.00 | 1.00 | 0.85 | 1.00  | 1.00 | 0.85 |
| Flt. Protected         | 0.95 | 1.00 | 1.00 | 0.95 | 1.00  | 1.00 | 0.95 | 1.00 | 1.00 | 0.95  | 1.00 | 1.00 |
| Satd. Flow (prot)      | 1593 | 1676 | 1425 | 1593 | 1676  | 1425 | 1593 | 1676 | 1425 | 1593  | 1676 | 1425 |
| Flt. Permitted         | 0.20 | 1.00 | 1.00 | 0.39 | 1.00  | 1.00 | 0.35 | 1.00 | 1.00 | 0.30  | 1.00 | 1.00 |
| Satd. Flow (perm)      | 327  | 1676 | 1425 | 661  | 1676  | 1425 | 593  | 1676 | 1425 | 509   | 1676 | 1425 |
| Volume (vph)           | 95   | 414  | 28   | 49   | 615   | 188  | 54   | 519  | 81   | 189   | 467  | 83   |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 95   | 414  | 28   | 49   | 615   | 188  | 54   | 519  | 81   | 189   | 467  | 83   |
| RTOR Reduction (vph)   | 0    | 0    | 16   | 0    | 0     | 109  | 0    | 0    | 46   | 0     | 0    | 47   |
| Lane Group Flow (vph)  | 95   | 414  | 12   | 49   | 615   | 79   | 54   | 519  | 35   | 189   | 467  | 36   |
| Parking (#/hr)         | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    | 0     | 0    | 0    |
| Turn Type              | Perm |      | Perm | Perm |       | Perm | Perm |      | Perm | Perm  |      | Perm |
| Protected Phases       |      | 4    |      |      | 8     |      |      | 2    |      |       | 6    |      |
| Permitted Phases       | 4    |      | 4    | 8    |       | 8    | 2    |      | 2    | 6     |      | 6    |
| Actuated Green, G (s)  | 24.0 | 24.0 | 24.0 | 24.0 | 24.0  | 24.0 | 25.0 | 25.0 | 25.0 | 25.0  | 25.0 | 25.0 |
| Effective Green, g (s) | 23.0 | 23.0 | 23.0 | 23.0 | 23.0  | 23.0 | 24.0 | 24.0 | 24.0 | 24.0  | 24.0 | 24.0 |
| Actuated g/C Ratio     | 0.42 | 0.42 | 0.42 | 0.42 | 0.42  | 0.42 | 0.44 | 0.44 | 0.44 | 0.44  | 0.44 | 0.44 |
| Clearance Time (s)     | 3.0  | 3.0  | 3.0  | 3.0  | 3.0   | 3.0  | 3.0  | 3.0  | 3.0  | 3.0   | 3.0  | 3.0  |
| Lane Grp Cap (vph)     | 137  | 701  | 596  | 276  | 701   | 596  | 259  | 731  | 622  | 222   | 731  | 622  |
| v/s Ratio Prot         |      | 0.25 |      |      | c0.37 |      |      | 0.31 |      |       | 0.28 |      |
| v/s Ratio Perm         | 0.29 |      | 0.01 | 0.07 |       | 0.06 | 0.09 |      | 0.02 | c0.37 |      | 0.03 |
| v/c Ratio              | 0.69 | 0.59 | 0.02 | 0.18 | 0.88  | 0.13 | 0.21 | 0.71 | 0.06 | 0.85  | 0.64 | 0.06 |
| Uniform Delay, d1      | 13.1 | 12.4 | 9.4  | 10.1 | 14.7  | 9.9  | 9.6  | 12.7 | 9.0  | 13.9  | 12.1 | 9.0  |
| Progression Factor     | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Incremental Delay, d2  | 25.1 | 3.6  | 0.1  | 1.4  | 14.5  | 0.5  | 1.8  | 5.8  | 0.2  | 31.6  | 4.2  | 0.2  |
| Delay (s)              | 38.2 | 16.0 | 9.4  | 11.5 | 29.2  | 10.3 | 11.4 | 18.4 | 9.1  | 45.5  | 16.4 | 9.1  |
| Level of Service       | D    | B    | A    | B    | C     | B    | B    | B    | A    | D     | B    | A    |
| Approach Delay (s)     |      | 19.6 |      |      | 24.0  |      |      | 16.7 |      |       | 23.0 |      |
| Approach LOS           |      | B    |      |      | C     |      |      | B    |      |       | C    |      |

**Intersection Summary**

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 21.2  | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 0.86  |                      |     |
| Actuated Cycle Length (s)         | 55.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 88.8% | ICU Level of Service | E   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |

MITIGATED CUMULATIVE PLUS SUTTER PROJECT  
WITH CENTRAL CITY TWO WAY CONVERSION

AM Peak Hour

Signalized Intersections

(am11)





HCM Signalized Intersection Capacity Analysis  
 3435: N Street & 29th Street

7/11/2005



| Movement               | EBT   | EBR  | EBR2 | WBL2  | WBL   | WBT   | SBL2 | SBL   | SBT  | SBR  |
|------------------------|-------|------|------|-------|-------|-------|------|-------|------|------|
| Lane Configurations    | ↔     | ↔    |      |       | ↔     | ↔     | ↔    | ↔     | ↔    | ↔    |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900  | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    | 4.0   | 4.0  |      |       | 4.0   | 4.0   | 4.0  | 4.0   | 4.0  |      |
| Lane Util. Factor      | 0.95  | 0.95 |      |       | 0.95  | 0.95  | 1.00 | 0.97  | 0.95 |      |
| Frnt                   | 0.95  | 0.85 |      |       | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 |      |
| Flt Protected          | 1.00  | 1.00 |      |       | 0.95  | 1.00  | 0.95 | 0.95  | 1.00 |      |
| Satd. Flow (prot)      | 1515  | 1354 |      |       | 1681  | 1770  | 1770 | 3433  | 3350 |      |
| Flt Permitted          | 1.00  | 1.00 |      |       | 0.95  | 1.00  | 0.95 | 0.95  | 1.00 |      |
| Satd. Flow (perm)      | 1515  | 1354 |      |       | 1681  | 1770  | 1770 | 3433  | 3350 |      |
| Volume (vph)           | 77    | 93   | 56   | 148   | 110   | 712   | 82   | 980   | 391  | 10   |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 77    | 93   | 56   | 148   | 110   | 712   | 82   | 980   | 391  | 10   |
| RTOR Reduction (vph)   | 0     | 40   | 0    | 0     | 0     | 0     | 0    | 0     | 2    | 0    |
| Lane Group Flow (vph)  | 114   | 72   | 0    | 0     | 258   | 712   | 82   | 980   | 399  | 0    |
| Parking (#/hr)         | 0     | 0    | 0    |       |       |       |      |       | 0    |      |
| Turn Type              |       | Prot |      | Split | Split |       | Perm | Perm  |      |      |
| Protected Phases       | 4     | 4    |      | 8     | 8     | 8     |      |       | 6    |      |
| Permitted Phases       |       |      |      |       |       |       | 6    | 6     |      |      |
| Actuated Green, G (s)  | 17.0  | 17.0 |      |       | 37.0  | 37.0  | 27.0 | 27.0  | 27.0 |      |
| Effective Green, g (s) | 16.0  | 16.0 |      |       | 36.0  | 36.0  | 26.0 | 26.0  | 26.0 |      |
| Actuated g/C Ratio     | 0.18  | 0.18 |      |       | 0.40  | 0.40  | 0.29 | 0.29  | 0.29 |      |
| Clearance Time (s)     | 3.0   | 3.0  |      |       | 3.0   | 3.0   | 3.0  | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     | 269   | 241  |      |       | 672   | 708   | 511  | 992   | 968  |      |
| v/s Ratio Prot         | c0.08 | 0.05 |      |       | 0.15  | c0.40 |      |       | 0.12 |      |
| v/s Ratio Perm         |       |      |      |       |       |       | 0.05 | c0.29 |      |      |
| v/c Ratio              | 0.42  | 0.30 |      |       | 0.38  | 1.01  | 0.16 | 0.99  | 0.41 |      |
| Uniform Delay, d1      | 32.9  | 32.1 |      |       | 19.1  | 27.0  | 23.9 | 31.8  | 25.8 |      |
| Progression Factor     | 1.00  | 1.00 |      |       | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 |      |
| Incremental Delay, d2  | 4.8   | 3.1  |      |       | 1.7   | 35.2  | 0.7  | 25.8  | 1.3  |      |
| Delay (s)              | 37.7  | 35.3 |      |       | 20.8  | 62.2  | 24.5 | 57.7  | 27.1 |      |
| Level of Service       | D     | D    |      |       | C     | E     | C    | E     | C    |      |
| Approach Delay (s)     | 36.5  |      |      |       |       | 51.2  |      |       | 47.4 |      |
| Approach LOS           | D     |      |      |       |       | D     |      |       | D    |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 47.9  | HCM Level of Service | D    |
| HCM Volume to Capacity ratio      | 0.88  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 82.3% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |



MITIGATED CUMULATIVE PLUS SUTTER PROJECT  
WITH CENTRAL CITY TWO WAY CONVERSION

PM Peak Hour

Signalized Intersections

(pm11)



HCM Signalized Intersection Capacity Analysis  
6485: N Street & 28th Street

7/11/2005



| Movement                  | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL   | SBT  | SBR  |
|---------------------------|------|-------|------|------|------|------|------|------|------|-------|------|------|
| Lane Configurations       |      | ↔     |      | ↔    | ↔    | ↔    |      | ↔    |      | ↔     | ↔    |      |
| Ideal Flow (vphpl)        | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)       |      | 4.0   |      | 4.0  | 4.0  | 4.0  |      | 4.0  |      | 4.0   | 4.0  |      |
| Lane Util. Factor         |      | 1.00  |      | 0.95 | 0.91 | 0.95 |      | 1.00 |      | 1.00  | 1.00 |      |
| Fr <sub>t</sub>           |      | 0.99  |      | 1.00 | 1.00 | 0.85 |      | 0.96 |      | 1.00  | 0.98 |      |
| Fl <sub>t</sub> Protected |      | 0.99  |      | 0.95 | 1.00 | 1.00 |      | 1.00 |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)         |      | 1639  |      | 1513 | 1526 | 1354 |      | 1610 |      | 1593  | 1645 |      |
| Fl <sub>t</sub> Permitted |      | 0.49  |      | 0.55 | 1.00 | 1.00 |      | 1.00 |      | 0.65  | 1.00 |      |
| Satd. Flow (perm)         |      | 815   |      | 875  | 1526 | 1354 |      | 1605 |      | 1087  | 1645 |      |
| Volume (vph)              | 89   | 225   | 23   | 37   | 618  | 115  | 5    | 145  | 60   | 499   | 121  | 17   |
| Peak-hour factor, PHF     | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)           | 89   | 225   | 23   | 37   | 618  | 115  | 5    | 145  | 60   | 499   | 121  | 17   |
| RTOR Reduction (vph)      | 0    | 5     | 0    | 0    | 0    | 64   | 0    | 29   | 0    | 0     | 10   | 0    |
| Lane Group Flow (vph)     | 0    | 332   | 0    | 37   | 618  | 51   | 0    | 181  | 0    | 499   | 128  | 0    |
| Parking (#/hr)            | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    |
| Turn Type                 | Perm |       |      | Perm |      | Perm | Perm |      |      | Perm  |      |      |
| Protected Phases          |      | 2     |      |      | 6    |      |      | 8    |      |       | 4    |      |
| Permitted Phases          | 2    |       |      | 6    |      | 6    | 8    | 8    |      | 4     | 4    |      |
| Actuated Green, G (s)     |      | 23.0  |      | 23.0 | 23.0 | 23.0 |      | 21.0 |      | 21.0  | 21.0 |      |
| Effective Green, g (s)    |      | 22.0  |      | 22.0 | 22.0 | 22.0 |      | 20.0 |      | 20.0  | 20.0 |      |
| Actuated g/C Ratio        |      | 0.44  |      | 0.44 | 0.44 | 0.44 |      | 0.40 |      | 0.40  | 0.40 |      |
| Clearance Time (s)        |      | 3.0   |      | 3.0  | 3.0  | 3.0  |      | 3.0  |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)        |      | 359   |      | 385  | 671  | 596  |      | 642  |      | 435   | 658  |      |
| v/s Ratio Prot            |      |       |      |      | 0.41 |      |      |      |      |       | 0.08 |      |
| v/s Ratio Perm            |      | c0.41 |      | 0.04 |      | 0.04 |      | 0.11 |      | c0.46 |      |      |
| v/c Ratio                 |      | 0.92  |      | 0.10 | 0.92 | 0.08 |      | 0.28 |      | 1.15  | 0.19 |      |
| Uniform Delay, d1         |      | 13.2  |      | 8.2  | 13.2 | 8.1  |      | 10.1 |      | 15.0  | 9.8  |      |
| Progression Factor        |      | 1.00  |      | 1.00 | 1.00 | 1.00 |      | 1.00 |      | 1.00  | 1.00 |      |
| Incremental Delay, d2     |      | 31.8  |      | 0.5  | 20.0 | 0.3  |      | 1.1  |      | 90.0  | 0.7  |      |
| Delay (s)                 |      | 45.0  |      | 8.7  | 33.2 | 8.4  |      | 11.2 |      | 105.0 | 10.4 |      |
| Level of Service          |      | D     |      | A    | C    | A    |      | B    |      | F     | B    |      |
| Approach Delay (s)        |      | 45.0  |      |      | 28.3 |      |      | 11.2 |      |       | 84.5 |      |
| Approach LOS              |      | D     |      |      | C    |      |      | B    |      |       | F    |      |

Intersection Summary

|                                   |        |                      |     |
|-----------------------------------|--------|----------------------|-----|
| HCM Average Control Delay         | 47.7   | HCM Level of Service | D   |
| HCM Volume to Capacity ratio      | 1.03   |                      |     |
| Actuated Cycle Length (s)         | 50.0   | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 103.5% | ICU Level of Service | G   |
| Analysis Period (min)             | 15     |                      |     |
| c Critical Lane Group             |        |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3435: N Street & 29th Street

7/11/2005



| Movement                          | EBT   | EBR  | EBR2 | WBL2  | WBL   | WBT   | SBL2 | SBL   | SBT  | SBR  |
|-----------------------------------|-------|------|------|-------|-------|-------|------|-------|------|------|
| Lane Configurations               |       |      |      |       |       |       |      |       |      |      |
| Ideal Flow (vphpl)                | 1900  | 1900 | 1900 | 1900  | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)               | 4.0   | 4.0  |      |       | 4.0   | 4.0   | 4.0  | 4.0   | 4.0  |      |
| Lane Util. Factor                 | 0.95  | 0.95 |      |       | 0.95  | 0.95  | 1.00 | 0.97  | 0.95 |      |
| Fr <sub>t</sub>                   | 1.00  | 0.85 |      |       | 1.00  | 1.00  | 1.00 | 1.00  | 0.99 |      |
| Fl <sub>t</sub> Protected         | 1.00  | 1.00 |      |       | 0.95  | 1.00  | 0.95 | 0.95  | 1.00 |      |
| Satd. Flow (prot)                 | 1593  | 1354 |      |       | 1681  | 1770  | 1770 | 3433  | 3339 |      |
| Fl <sub>t</sub> Permitted         | 1.00  | 1.00 |      |       | 0.95  | 1.00  | 0.95 | 0.95  | 1.00 |      |
| Satd. Flow (perm)                 | 1593  | 1354 |      |       | 1681  | 1770  | 1770 | 3433  | 3339 |      |
| Volume (vph)                      | 272   | 5    | 366  | 159   | 157   | 678   | 104  | 1278  | 810  | 40   |
| Peak-hour factor, PHF             | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 272   | 5    | 366  | 159   | 157   | 678   | 104  | 1278  | 810  | 40   |
| RTOR Reduction (vph)              | 0     | 285  | 0    | 0     | 0     | 0     | 0    | 0     | 4    | 0    |
| Lane Group Flow (vph)             | 272   | 86   | 0    | 0     | 316   | 678   | 104  | 1278  | 846  | 0    |
| Parking (#/hr)                    | 0     | 0    | 0    |       |       |       |      |       | 0    |      |
| Turn Type                         |       | Prot |      | Split | Split |       | Perm | Perm  |      |      |
| Protected Phases                  | 4     | 4    |      | 8     | 8     | 8     |      |       | 6    |      |
| Permitted Phases                  |       |      |      |       |       |       | 6    | 6     |      |      |
| Actuated Green, G (s)             | 17.0  | 17.0 |      |       | 37.0  | 37.0  | 37.0 | 37.0  | 37.0 |      |
| Effective Green, g (s)            | 16.0  | 16.0 |      |       | 36.0  | 36.0  | 36.0 | 36.0  | 36.0 |      |
| Actuated g/C Ratio                | 0.16  | 0.16 |      |       | 0.36  | 0.36  | 0.36 | 0.36  | 0.36 |      |
| Clearance Time (s)                | 3.0   | 3.0  |      |       | 3.0   | 3.0   | 3.0  | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)                | 255   | 217  |      |       | 605   | 637   | 637  | 1236  | 1202 |      |
| v/s Ratio Prot                    | c0.17 | 0.06 |      |       | 0.19  | c0.38 |      |       | 0.25 |      |
| v/s Ratio Perm                    |       |      |      |       |       |       | 0.06 | c0.37 |      |      |
| v/c Ratio                         | 1.07  | 0.40 |      |       | 0.52  | 1.06  | 0.16 | 1.03  | 0.70 |      |
| Uniform Delay, d <sub>1</sub>     | 42.0  | 37.7 |      |       | 25.2  | 32.0  | 21.8 | 32.0  | 27.4 |      |
| Progression Factor                | 1.00  | 1.00 |      |       | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 |      |
| Incremental Delay, d <sub>2</sub> | 75.1  | 5.4  |      |       | 3.2   | 54.0  | 0.6  | 34.8  | 3.5  |      |
| Delay (s)                         | 117.1 | 43.0 |      |       | 28.4  | 86.0  | 22.3 | 66.8  | 30.9 |      |
| Level of Service                  | F     | D    |      |       | C     | F     | C    | E     | C    |      |
| Approach Delay (s)                | 74.4  |      |      |       |       | 67.7  |      |       | 51.0 |      |
| Approach LOS                      | E     |      |      |       |       | E     |      |       | D    |      |

**Intersection Summary**

|                                   |        |                      |      |
|-----------------------------------|--------|----------------------|------|
| HCM Average Control Delay         | 59.2   | HCM Level of Service | E    |
| HCM Volume to Capacity ratio      | 1.05   |                      |      |
| Actuated Cycle Length (s)         | 100.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 105.0% | ICU Level of Service | G    |
| Analysis Period (min)             | 15     |                      |      |
| c Critical Lane Group             |        |                      |      |

HCM Signalized Intersection Capacity Analysis  
3436: Capitol & Alhambra

7/11/2005



| Movement                          | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL   | SBT  | SBR  |
|-----------------------------------|------|------|------|------|-------|------|------|------|------|-------|------|------|
| Lane Configurations               | ↖    | ↑    | ↗    | ↖    | ↑     | ↗    | ↖    | ↑    | ↗    | ↖     | ↑    | ↗    |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)               | 4.0  | 4.0  | 4.0  | 4.0  | 4.0   | 4.0  | 4.0  | 4.0  | 4.0  | 4.0   | 4.0  | 4.0  |
| Lane Util. Factor                 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Fr <sub>t</sub>                   | 1.00 | 1.00 | 0.85 | 1.00 | 1.00  | 0.85 | 1.00 | 1.00 | 0.85 | 1.00  | 1.00 | 0.85 |
| Fl <sub>t</sub> Protected         | 0.95 | 1.00 | 1.00 | 0.95 | 1.00  | 1.00 | 0.95 | 1.00 | 1.00 | 0.95  | 1.00 | 1.00 |
| Satd. Flow (prot)                 | 1770 | 1676 | 1425 | 1770 | 1676  | 1425 | 1770 | 1676 | 1425 | 1770  | 1676 | 1425 |
| Fl <sub>t</sub> Permitted         | 0.18 | 1.00 | 1.00 | 0.38 | 1.00  | 1.00 | 0.31 | 1.00 | 1.00 | 0.30  | 1.00 | 1.00 |
| Satd. Flow (perm)                 | 339  | 1676 | 1425 | 708  | 1676  | 1425 | 572  | 1676 | 1425 | 562   | 1676 | 1425 |
| Volume (vph)                      | 129  | 415  | 7    | 49   | 677   | 116  | 55   | 537  | 81   | 248   | 531  | 57   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 129  | 415  | 7    | 49   | 677   | 116  | 55   | 537  | 81   | 248   | 531  | 57   |
| RTOR Reduction (vph)              | 0    | 0    | 4    | 0    | 0     | 70   | 0    | 0    | 44   | 0     | 0    | 31   |
| Lane Group Flow (vph)             | 129  | 415  | 3    | 49   | 677   | 46   | 55   | 537  | 37   | 248   | 531  | 26   |
| Parking (#/hr)                    |      | 0    | 0    |      | 0     | 0    |      | 0    | 0    |       | 0    | 0    |
| Turn Type                         | Perm |      | Perm | Perm |       | Perm | Perm |      | Perm | Perm  |      | Perm |
| Protected Phases                  |      | 4    |      |      | 8     |      |      | 2    |      |       | 6    |      |
| Permitted Phases                  | 4    |      | 4    | 8    |       | 8    | 2    |      | 2    | 6     |      | 6    |
| Actuated Green, G (s)             | 23.0 | 23.0 | 23.0 | 23.0 | 23.0  | 23.0 | 26.0 | 26.0 | 26.0 | 26.0  | 26.0 | 26.0 |
| Effective Green, g (s)            | 22.0 | 22.0 | 22.0 | 22.0 | 22.0  | 22.0 | 25.0 | 25.0 | 25.0 | 25.0  | 25.0 | 25.0 |
| Actuated g/C Ratio                | 0.40 | 0.40 | 0.40 | 0.40 | 0.40  | 0.40 | 0.45 | 0.45 | 0.45 | 0.45  | 0.45 | 0.45 |
| Clearance Time (s)                | 3.0  | 3.0  | 3.0  | 3.0  | 3.0   | 3.0  | 3.0  | 3.0  | 3.0  | 3.0   | 3.0  | 3.0  |
| Lane Grp Cap (vph)                | 136  | 670  | 570  | 283  | 670   | 570  | 260  | 762  | 648  | 255   | 762  | 648  |
| v/s Ratio Prot                    |      | 0.25 |      |      | c0.40 |      |      | 0.32 |      |       | 0.32 |      |
| v/s Ratio Perm                    | 0.38 |      | 0.00 | 0.07 |       | 0.03 | 0.10 |      | 0.03 | c0.44 |      | 0.02 |
| v/c Ratio                         | 0.95 | 0.62 | 0.00 | 0.17 | 1.01  | 0.08 | 0.21 | 0.70 | 0.06 | 0.97  | 0.70 | 0.04 |
| Uniform Delay, d <sub>1</sub>     | 16.0 | 13.2 | 9.9  | 10.6 | 16.5  | 10.2 | 9.1  | 12.0 | 8.4  | 14.7  | 12.0 | 8.3  |
| Progression Factor                | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Incremental Delay, d <sub>2</sub> | 64.5 | 4.3  | 0.0  | 1.3  | 37.4  | 0.3  | 1.8  | 5.4  | 0.2  | 49.7  | 5.2  | 0.1  |
| Delay (s)                         | 80.4 | 17.4 | 9.9  | 12.0 | 53.9  | 10.5 | 10.9 | 17.5 | 8.6  | 64.4  | 17.2 | 8.4  |
| Level of Service                  | F    | B    | A    | B    | D     | B    | B    | B    | A    | E     | B    | A    |
| Approach Delay (s)                |      | 32.1 |      |      | 45.5  |      |      | 15.8 |      |       | 30.6 |      |
| Approach LOS                      |      | C    |      |      | D     |      |      | B    |      |       | C    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 31.8  | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 0.99  |                      |     |
| Actuated Cycle Length (s)         | 55.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 98.1% | ICU Level of Service | F   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |





MITIGATED CUMULATIVE PLUS SUTTER PROGRAM PLUS  
TRINITY PROJECT  
WITH CENTRAL CITY TWO WAY CONVERSION

AM Peak Hour

Signalized Intersections

(am12)



HCM Signalized Intersection Capacity Analysis  
 3435: N Street & 29th Street

7/11/2005



| Movement               | EBT   | EBR  | EBR2 | WBL2  | WBL   | WBT   | SBL2 | SBL   | SBT  | SBR  |
|------------------------|-------|------|------|-------|-------|-------|------|-------|------|------|
| Lane Configurations    | ↔     | ↔    |      |       | ↔     | ↔     | ↔    | ↔     | ↔    | ↔    |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900  | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    | 4.0   | 4.0  |      |       | 4.0   | 4.0   | 4.0  | 4.0   | 4.0  |      |
| Lane Util. Factor      | 0.95  | 0.95 |      |       | 0.95  | 0.95  | 1.00 | 0.97  | 0.95 |      |
| Frt                    | 0.95  | 0.85 |      |       | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 |      |
| Flt Protected          | 1.00  | 1.00 |      |       | 0.95  | 1.00  | 0.95 | 0.95  | 1.00 |      |
| Satd. Flow (prot)      | 1507  | 1354 |      |       | 1681  | 1770  | 1770 | 3433  | 3352 |      |
| Flt Permitted          | 1.00  | 1.00 |      |       | 0.95  | 1.00  | 0.95 | 0.95  | 1.00 |      |
| Satd. Flow (perm)      | 1507  | 1354 |      |       | 1681  | 1770  | 1770 | 3433  | 3352 |      |
| Volume (vph)           | 73    | 99   | 54   | 147   | 110   | 760   | 85   | 975   | 378  | 8    |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 73    | 99   | 54   | 147   | 110   | 760   | 85   | 975   | 378  | 8    |
| RTOR Reduction (vph)   | 0     | 37   | 0    | 0     | 0     | 0     | 0    | 0     | 1    | 0    |
| Lane Group Flow (vph)  | 114   | 75   | 0    | 0     | 257   | 760   | 85   | 975   | 385  | 0    |
| Parking (#/hr)         | 0     | 0    | 0    |       |       |       |      |       | 0    |      |
| Turn Type              |       | Prot |      | Split | Split |       | Perm | Perm  |      |      |
| Protected Phases       | 4     | 4    |      | 8     | 8     | 8     |      |       | 6    |      |
| Permitted Phases       |       |      |      |       |       |       | 6    | 6     |      |      |
| Actuated Green, G (s)  | 17.0  | 17.0 |      |       | 38.0  | 38.0  | 26.0 | 26.0  | 26.0 |      |
| Effective Green, g (s) | 16.0  | 16.0 |      |       | 37.0  | 37.0  | 25.0 | 25.0  | 25.0 |      |
| Actuated g/C Ratio     | 0.18  | 0.18 |      |       | 0.41  | 0.41  | 0.28 | 0.28  | 0.28 |      |
| Clearance Time (s)     | 3.0   | 3.0  |      |       | 3.0   | 3.0   | 3.0  | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     | 268   | 241  |      |       | 691   | 728   | 492  | 954   | 931  |      |
| v/s Ratio Prot         | c0.08 | 0.06 |      |       | 0.15  | c0.43 |      |       | 0.11 |      |
| v/s Ratio Perm         |       |      |      |       |       |       | 0.05 | c0.28 |      |      |
| v/c Ratio              | 0.43  | 0.31 |      |       | 0.37  | 1.04  | 0.17 | 1.02  | 0.41 |      |
| Uniform Delay, d1      | 32.9  | 32.2 |      |       | 18.4  | 26.5  | 24.7 | 32.5  | 26.5 |      |
| Progression Factor     | 1.00  | 1.00 |      |       | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 |      |
| Incremental Delay, d2  | 4.9   | 3.3  |      |       | 1.5   | 45.4  | 0.8  | 34.8  | 1.4  |      |
| Delay (s)              | 37.8  | 35.5 |      |       | 20.0  | 71.9  | 25.4 | 67.3  | 27.9 |      |
| Level of Service       | D     | D    |      |       | B     | E     | C    | E     | C    |      |
| Approach Delay (s)     | 36.7  |      |      |       |       | 58.8  |      |       | 54.3 |      |
| Approach LOS           | D     |      |      |       |       | E     |      |       | D    |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 54.5  | HCM Level of Service | D    |
| HCM Volume to Capacity ratio      | 0.91  |                      |      |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 84.7% | ICU Level of Service | E    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |



MITIGATED CUMULATIVE PLUS SUTTER PROGRAM PLUS  
TRINITY PROJECT  
WITH CENTRAL CITY TWO WAY CONVERSION

PM Peak Hour

Signalized Intersections

(pm12)



HCM Signalized Intersection Capacity Analysis  
 6485: N Street & 28th Street

7/11/2005

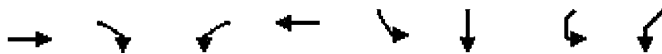


| Movement                          | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations               |      | ↔    |      |      | ↑    | ↗    |      | ↕    |      | ↖    | ↓    |      |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.0  |      |      | 4.0  | 4.0  |      | 4.0  |      | 4.0  | 4.0  |      |
| Lane Util. Factor                 |      | 1.00 |      |      | 1.00 | 1.00 |      | 1.00 |      | 1.00 | 1.00 |      |
| Fr <sub>t</sub>                   |      | 0.99 |      |      | 1.00 | 0.85 |      | 0.96 |      | 1.00 | 0.98 |      |
| Fl <sub>t</sub> Protected         |      | 0.99 |      |      | 1.00 | 1.00 |      | 1.00 |      | 0.95 | 1.00 |      |
| Satd. Flow (prot)                 |      | 1640 |      |      | 1672 | 1425 |      | 1608 |      | 1593 | 1641 |      |
| Fl <sub>t</sub> Permitted         |      | 0.52 |      |      | 0.97 | 1.00 |      | 0.99 |      | 0.63 | 1.00 |      |
| Satd. Flow (perm)                 |      | 863  |      |      | 1626 | 1425 |      | 1602 |      | 1063 | 1641 |      |
| Volume (vph)                      | 89   | 229  | 23   | 36   | 603  | 122  | 6    | 145  | 63   | 489  | 121  | 20   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 89   | 229  | 23   | 36   | 603  | 122  | 6    | 145  | 63   | 489  | 121  | 20   |
| RTOR Reduction (vph)              | 0    | 5    | 0    | 0    | 0    | 69   | 0    | 27   | 0    | 0    | 11   | 0    |
| Lane Group Flow (vph)             | 0    | 336  | 0    | 0    | 639  | 53   | 0    | 187  | 0    | 489  | 130  | 0    |
| Parking (#/hr)                    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Turn Type                         | Perm |      |      | Perm |      | Perm | Perm |      |      | Perm |      |      |
| Protected Phases                  |      | 2    |      |      | 6    |      |      | 8    |      |      | 4    |      |
| Permitted Phases                  | 2    |      |      | 6    |      | 6    | 8    | 8    |      | 4    | 4    |      |
| Actuated Green, G (s)             |      | 25.0 |      |      | 25.0 | 25.0 |      | 24.0 |      | 24.0 | 24.0 |      |
| Effective Green, g (s)            |      | 24.0 |      |      | 24.0 | 24.0 |      | 23.0 |      | 23.0 | 23.0 |      |
| Actuated g/C Ratio                |      | 0.44 |      |      | 0.44 | 0.44 |      | 0.42 |      | 0.42 | 0.42 |      |
| Clearance Time (s)                |      | 3.0  |      |      | 3.0  | 3.0  |      | 3.0  |      | 3.0  | 3.0  |      |
| Lane Grp Cap (vph)                |      | 377  |      |      | 710  | 622  |      | 670  |      | 445  | 686  |      |
| v/s Ratio Prot                    |      |      |      |      |      |      |      |      |      |      | 0.08 |      |
| v/s Ratio Perm                    |      | 0.39 |      |      | 0.39 | 0.04 |      | 0.12 |      | 0.46 |      |      |
| v/c Ratio                         |      | 0.89 |      |      | 0.90 | 0.09 |      | 0.28 |      | 1.10 | 0.19 |      |
| Uniform Delay, d <sub>1</sub>     |      | 14.3 |      |      | 14.4 | 9.1  |      | 10.5 |      | 16.0 | 10.1 |      |
| Progression Factor                |      | 1.00 |      |      | 1.00 | 1.00 |      | 1.00 |      | 1.00 | 1.00 |      |
| Incremental Delay, d <sub>2</sub> |      | 25.8 |      |      | 16.7 | 0.3  |      | 1.0  |      | 72.2 | 0.6  |      |
| Delay (s)                         |      | 40.2 |      |      | 31.0 | 9.3  |      | 11.6 |      | 88.2 | 10.7 |      |
| Level of Service                  |      | D    |      |      | C    | A    |      | B    |      | F    | B    |      |
| Approach Delay (s)                |      | 40.2 |      |      | 27.6 |      |      | 11.6 |      |      | 70.9 |      |
| Approach LOS                      |      | D    |      |      | C    |      |      | B    |      |      | E    |      |

| Intersection Summary              |        |                      |     |
|-----------------------------------|--------|----------------------|-----|
| HCM Average Control Delay         | 42.0   | HCM Level of Service | D   |
| HCM Volume to Capacity ratio      | 1.00   |                      |     |
| Actuated Cycle Length (s)         | 55.0   | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 104.3% | ICU Level of Service | G   |
| Analysis Period (min)             | 15     |                      |     |
| c Critical Lane Group             |        |                      |     |

HCM Signalized Intersection Capacity Analysis  
 3428: J Street & 29th St off ramp

7/11/2005



| Movement                          | EBT  | EBR   | WBL   | WBT   | SBL   | SBT   | SWL2  | SWL   |
|-----------------------------------|------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations               | ↑↑   | ↑     |       | ↑     |       | ↑↑↑   | ↑     | ↑↑    |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  |
| Total Lost time (s)               | 4.0  | 4.0   |       | 4.0   |       | 4.0   | 4.0   | 4.0   |
| Lane Util. Factor                 | 0.95 | 1.00  |       | 1.00  |       | 0.91  | 0.91  | 0.91  |
| Fr <sub>t</sub>                   | 1.00 | 0.85  |       | 1.00  |       | 1.00  | 1.00  | 1.00  |
| Fl <sub>t</sub> Protected         | 1.00 | 1.00  |       | 0.95  |       | 0.99  | 0.95  | 0.95  |
| Satd. Flow (prot)                 | 3539 | 1425  |       | 1770  |       | 4871  | 1610  | 3221  |
| Fl <sub>t</sub> Permitted         | 1.00 | 1.00  |       | 0.95  |       | 0.99  | 0.95  | 0.95  |
| Satd. Flow (perm)                 | 3539 | 1425  |       | 1770  |       | 4871  | 1610  | 3221  |
| Volume (vph)                      | 1300 | 690   | 145   | 0     | 82    | 359   | 104   | 436   |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)                   | 1300 | 690   | 145   | 0     | 82    | 359   | 104   | 436   |
| RTOR Reduction (vph)              | 0    | 29    | 0     | 0     | 0     | 0     | 0     | 0     |
| Lane Group Flow (vph)             | 1300 | 661   | 0     | 145   | 0     | 441   | 104   | 436   |
| Parking (#/hr)                    |      | 0     |       |       |       | 0     |       |       |
| Turn Type                         |      | Perm  | Split |       | Split |       | Split |       |
| Protected Phases                  | 4    |       | 8     | 8     | 6     | 6     | 2     | 2     |
| Permitted Phases                  |      | 4     |       |       |       |       |       |       |
| Actuated Green, G (s)             | 36.0 | 36.0  |       | 7.0   |       | 8.0   | 17.0  | 17.0  |
| Effective Green, g (s)            | 35.0 | 35.0  |       | 6.0   |       | 7.0   | 16.0  | 16.0  |
| Actuated g/C Ratio                | 0.44 | 0.44  |       | 0.08  |       | 0.09  | 0.20  | 0.20  |
| Clearance Time (s)                | 3.0  | 3.0   |       | 3.0   |       | 3.0   | 3.0   | 3.0   |
| Lane Grp Cap (vph)                | 1548 | 623   |       | 133   |       | 426   | 322   | 644   |
| v/s Ratio Prot                    | 0.37 |       |       | c0.08 |       | c0.09 | 0.06  | c0.14 |
| v/s Ratio Perm                    |      | c0.46 |       |       |       |       |       |       |
| v/c Ratio                         | 0.84 | 1.06  |       | 1.09  |       | 1.04  | 0.32  | 0.68  |
| Uniform Delay, d <sub>1</sub>     | 20.0 | 22.5  |       | 37.0  |       | 36.5  | 27.4  | 29.6  |
| Progression Factor                | 0.46 | 0.20  |       | 0.63  |       | 1.00  | 1.00  | 1.00  |
| Incremental Delay, d <sub>2</sub> | 3.5  | 44.9  |       | 85.5  |       | 53.0  | 2.6   | 5.6   |
| Delay (s)                         | 12.6 | 49.4  |       | 108.8 |       | 89.5  | 30.0  | 35.2  |
| Level of Service                  | B    | D     |       | F     |       | F     | C     | D     |
| Approach Delay (s)                | 25.4 |       |       | 108.8 |       | 89.5  |       | 34.2  |
| Approach LOS                      | C    |       |       | F     |       | F     |       | C     |

**Intersection Summary**

|                                   |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 39.9  | HCM Level of Service | D    |
| HCM Volume to Capacity ratio      | 0.96  |                      |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) | 16.0 |
| Intersection Capacity Utilization | 78.3% | ICU Level of Service | D    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |



HCM Signalized Intersection Capacity Analysis  
 3435: N Street & 29th Street

7/11/2005



| Movement               | EBT   | EBR  | EBR2 | WBL2  | WBL   | WBT   | SBL2 | SBL   | SBT  | SBR  |
|------------------------|-------|------|------|-------|-------|-------|------|-------|------|------|
| Lane Configurations    | ↔     | ↔    |      |       | ↔     | ↔     | ↔    | ↔     | ↔    | ↔    |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900  | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    | 4.0   | 4.0  |      |       | 4.0   | 4.0   | 4.0  | 4.0   | 4.0  |      |
| Lane Util. Factor      | 0.95  | 0.95 |      |       | 0.95  | 0.95  | 1.00 | 0.97  | 0.95 |      |
| Fr't                   | 1.00  | 0.85 |      |       | 1.00  | 1.00  | 1.00 | 1.00  | 0.99 |      |
| Flt Protected          | 1.00  | 1.00 |      |       | 0.95  | 1.00  | 0.95 | 0.95  | 1.00 |      |
| Satd. Flow (prot)      | 1593  | 1354 |      |       | 1681  | 1770  | 1770 | 3433  | 3343 |      |
| Flt Permitted          | 1.00  | 1.00 |      |       | 0.95  | 1.00  | 0.95 | 0.95  | 1.00 |      |
| Satd. Flow (perm)      | 1593  | 1354 |      |       | 1681  | 1770  | 1770 | 3433  | 3343 |      |
| Volume (vph)           | 303   | 87   | 249  | 151   | 162   | 672   | 82   | 1200  | 931  | 37   |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 303   | 87   | 249  | 151   | 162   | 672   | 82   | 1200  | 931  | 37   |
| RTOR Reduction (vph)   | 0     | 103  | 0    | 0     | 0     | 0     | 0    | 0     | 3    | 0    |
| Lane Group Flow (vph)  | 303   | 233  | 0    | 0     | 313   | 672   | 82   | 1200  | 965  | 0    |
| Parking (#/hr)         | 0     | 0    | 0    |       |       |       |      |       | 0    |      |
| Turn Type              |       | Prot |      | Split | Split |       | Perm | Perm  |      |      |
| Protected Phases       | 4     | 4    |      | 8     | 8     | 8     |      |       | 6    |      |
| Permitted Phases       |       |      |      |       |       |       | 6    | 6     |      |      |
| Actuated Green, G (s)  | 19.0  | 19.0 |      |       | 37.0  | 37.0  | 35.0 | 35.0  | 35.0 |      |
| Effective Green, g (s) | 18.0  | 18.0 |      |       | 36.0  | 36.0  | 34.0 | 34.0  | 34.0 |      |
| Actuated g/C Ratio     | 0.18  | 0.18 |      |       | 0.36  | 0.36  | 0.34 | 0.34  | 0.34 |      |
| Clearance Time (s)     | 3.0   | 3.0  |      |       | 3.0   | 3.0   | 3.0  | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     | 287   | 244  |      |       | 605   | 637   | 602  | 1167  | 1137 |      |
| v/s Ratio Prot         | c0.19 | 0.17 |      |       | 0.19  | c0.38 |      |       | 0.29 |      |
| v/s Ratio Perm         |       |      |      |       |       |       | 0.05 | c0.35 |      |      |
| v/c Ratio              | 1.06  | 0.95 |      |       | 0.52  | 1.05  | 0.14 | 1.03  | 0.85 |      |
| Uniform Delay, d1      | 41.0  | 40.6 |      |       | 25.2  | 32.0  | 22.8 | 33.0  | 30.6 |      |
| Progression Factor     | 1.00  | 1.00 |      |       | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 |      |
| Incremental Delay, d2  | 68.6  | 46.8 |      |       | 3.1   | 51.0  | 0.5  | 33.8  | 8.0  |      |
| Delay (s)              | 109.6 | 87.4 |      |       | 28.3  | 83.0  | 23.3 | 66.8  | 38.6 |      |
| Level of Service       | F     | F    |      |       | C     | F     | C    | E     | D    |      |
| Approach Delay (s)     | 97.9  |      |      |       |       | 65.6  |      |       | 53.1 |      |
| Approach LOS           | F     |      |      |       |       | E     |      |       | D    |      |

| Intersection Summary              |       |                      |      |
|-----------------------------------|-------|----------------------|------|
| HCM Average Control Delay         | 63.7  | HCM Level of Service | E    |
| HCM Volume to Capacity ratio      | 1.04  |                      |      |
| Actuated Cycle Length (s)         | 100.0 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 98.2% | ICU Level of Service | F    |
| Analysis Period (min)             | 15    |                      |      |
| c Critical Lane Group             |       |                      |      |

HCM Signalized Intersection Capacity Analysis  
3436: Capitol & Alhambra

7/11/2005



| Movement                          | EBL  | EBT  | EBR  | WBL  | WBT   | WBR  | NBL  | NBT  | NBR  | SBL   | SBT  | SBR  |
|-----------------------------------|------|------|------|------|-------|------|------|------|------|-------|------|------|
| Lane Configurations               | ↖    | ↑    | ↗    | ↖    | ↑     | ↗    | ↖    | ↑    | ↗    | ↖     | ↑    | ↗    |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)               | 4.0  | 4.0  | 4.0  | 4.0  | 4.0   | 4.0  | 4.0  | 4.0  | 4.0  | 4.0   | 4.0  | 4.0  |
| Lane Util. Factor                 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Fr <sub>t</sub>                   | 1.00 | 1.00 | 0.85 | 1.00 | 1.00  | 0.85 | 1.00 | 1.00 | 0.85 | 1.00  | 1.00 | 0.85 |
| Flt Protected                     | 0.95 | 1.00 | 1.00 | 0.95 | 1.00  | 1.00 | 0.95 | 1.00 | 1.00 | 0.95  | 1.00 | 1.00 |
| Satd. Flow (prot)                 | 1770 | 1676 | 1425 | 1770 | 1676  | 1425 | 1770 | 1676 | 1425 | 1770  | 1676 | 1425 |
| Flt Permitted                     | 0.20 | 1.00 | 1.00 | 0.40 | 1.00  | 1.00 | 0.31 | 1.00 | 1.00 | 0.31  | 1.00 | 1.00 |
| Satd. Flow (perm)                 | 373  | 1676 | 1425 | 740  | 1676  | 1425 | 573  | 1676 | 1425 | 573   | 1676 | 1425 |
| Volume (vph)                      | 142  | 408  | 7    | 49   | 672   | 126  | 55   | 526  | 81   | 259   | 526  | 57   |
| Peak-hour factor, PHF             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 142  | 408  | 7    | 49   | 672   | 126  | 55   | 526  | 81   | 259   | 526  | 57   |
| RTOR Reduction (vph)              | 0    | 0    | 4    | 0    | 0     | 76   | 0    | 0    | 45   | 0     | 0    | 32   |
| Lane Group Flow (vph)             | 142  | 408  | 3    | 49   | 672   | 50   | 55   | 526  | 36   | 259   | 526  | 25   |
| Parking (#/hr)                    |      | 0    | 0    |      | 0     | 0    |      | 0    | 0    |       | 0    | 0    |
| Turn Type                         | Perm |      | Perm | Perm |       | Perm | Perm |      | Perm | Perm  |      | Perm |
| Protected Phases                  |      | 4    |      |      | 8     |      |      | 2    |      |       | 6    |      |
| Permitted Phases                  | 4    |      | 4    | 8    |       | 8    | 2    |      | 2    | 6     |      | 6    |
| Actuated Green, G (s)             | 21.0 | 21.0 | 21.0 | 21.0 | 21.0  | 21.0 | 23.0 | 23.0 | 23.0 | 23.0  | 23.0 | 23.0 |
| Effective Green, g (s)            | 20.0 | 20.0 | 20.0 | 20.0 | 20.0  | 20.0 | 22.0 | 22.0 | 22.0 | 22.0  | 22.0 | 22.0 |
| Actuated g/C Ratio                | 0.40 | 0.40 | 0.40 | 0.40 | 0.40  | 0.40 | 0.44 | 0.44 | 0.44 | 0.44  | 0.44 | 0.44 |
| Clearance Time (s)                | 3.0  | 3.0  | 3.0  | 3.0  | 3.0   | 3.0  | 3.0  | 3.0  | 3.0  | 3.0   | 3.0  | 3.0  |
| Lane Grp Cap (vph)                | 149  | 670  | 570  | 296  | 670   | 570  | 252  | 737  | 627  | 252   | 737  | 627  |
| v/s Ratio Prot                    |      | 0.24 |      |      | c0.40 |      |      | 0.31 |      |       | 0.31 |      |
| v/s Ratio Perm                    | 0.38 |      | 0.00 | 0.07 |       | 0.04 | 0.10 |      | 0.03 | c0.45 |      | 0.02 |
| v/c Ratio                         | 0.95 | 0.61 | 0.00 | 0.17 | 1.00  | 0.09 | 0.22 | 0.71 | 0.06 | 1.03  | 0.71 | 0.04 |
| Uniform Delay, d <sub>1</sub>     | 14.5 | 11.9 | 9.0  | 9.6  | 15.0  | 9.3  | 8.7  | 11.4 | 8.0  | 14.0  | 11.4 | 8.0  |
| Progression Factor                | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Incremental Delay, d <sub>2</sub> | 62.2 | 4.1  | 0.0  | 1.2  | 35.5  | 0.3  | 2.0  | 5.8  | 0.2  | 64.1  | 5.8  | 0.1  |
| Delay (s)                         | 76.7 | 16.0 | 9.0  | 10.8 | 50.5  | 9.6  | 10.7 | 17.3 | 8.2  | 78.1  | 17.3 | 8.1  |
| Level of Service                  | E    | B    | A    | B    | D     | A    | B    | B    | A    | E     | B    | A    |
| Approach Delay (s)                |      | 31.4 |      |      | 42.1  |      |      | 15.6 |      |       | 35.3 |      |
| Approach LOS                      |      | C    |      |      | D     |      |      | B    |      |       | D    |      |

Intersection Summary

|                                   |       |                      |     |
|-----------------------------------|-------|----------------------|-----|
| HCM Average Control Delay         | 32.1  | HCM Level of Service | C   |
| HCM Volume to Capacity ratio      | 1.02  |                      |     |
| Actuated Cycle Length (s)         | 50.0  | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 98.6% | ICU Level of Service | F   |
| Analysis Period (min)             | 15    |                      |     |
| c Critical Lane Group             |       |                      |     |